

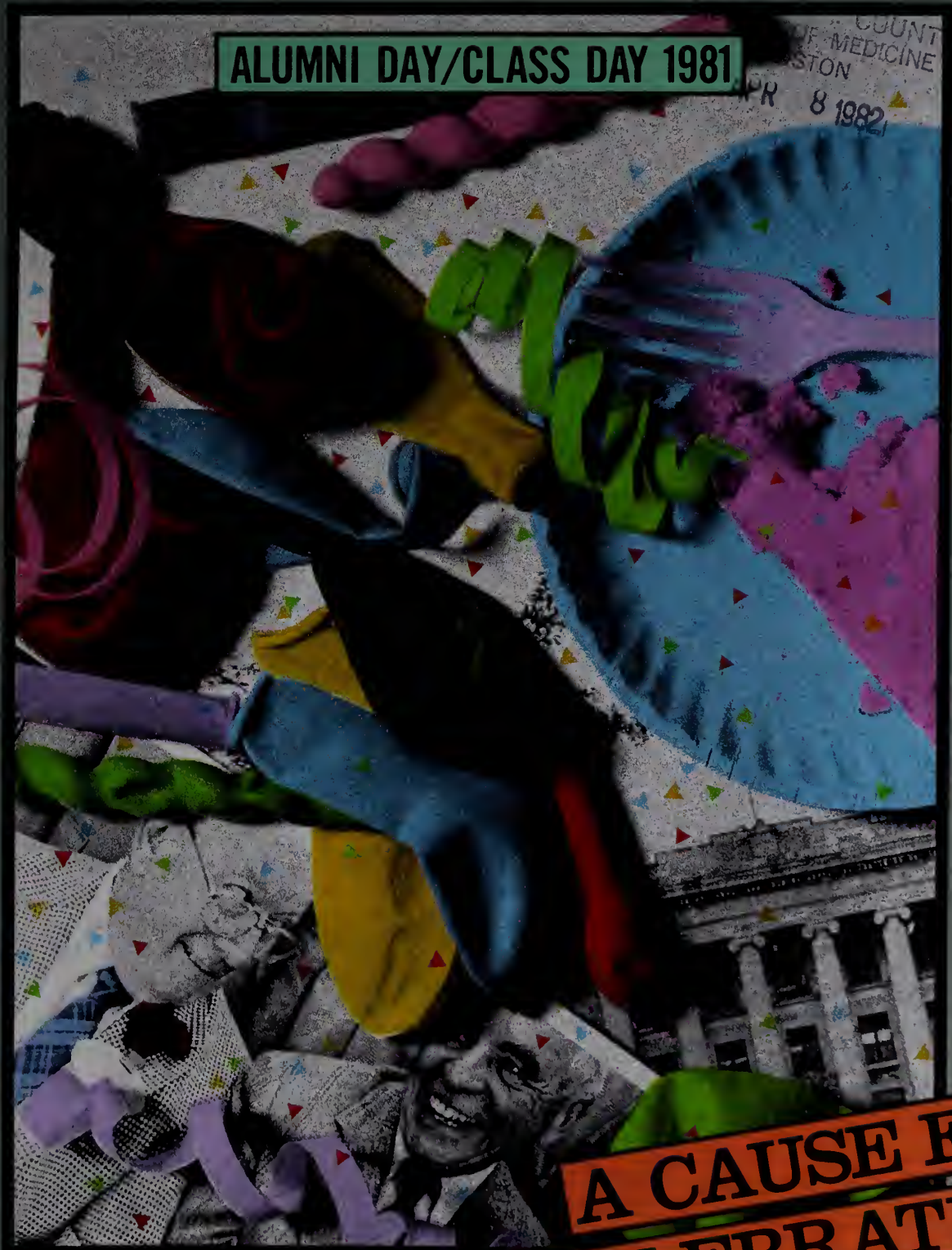
HARVARD MEDICAL

SUMMER 1981

ALUMNI BULLETIN

ALUMNI DAY/CLASS DAY 1981

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HARVARD MEDICAL

ALUMNI BULLETIN / SUMMER 1981

VOL. 55, NO. 3

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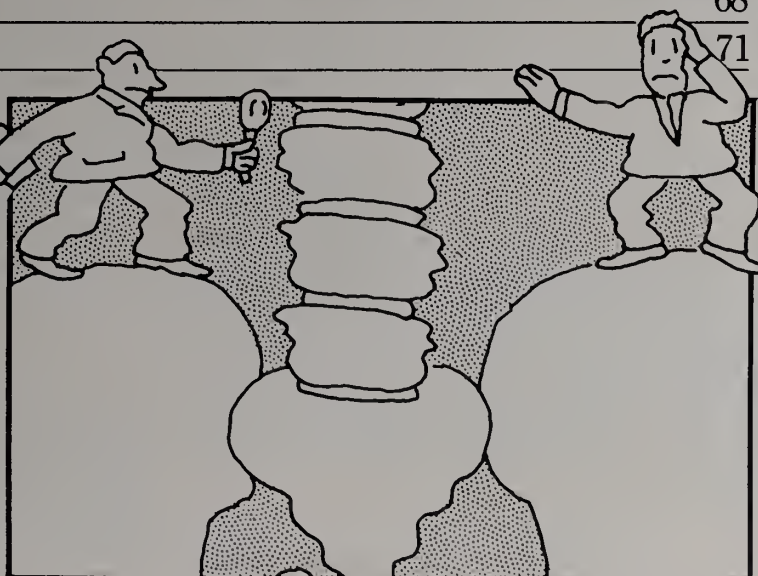
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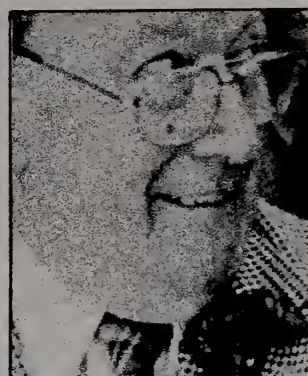
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12 "The hardest task for scientists—barely yet begun—is to find out what their findings may mean, deep inside, and how this piece of solid information, firmly established by experimentation and confirmation, fits with that unlike piece over there. The natural world is all of a piece—we all know this in our bones—but we have a long, long way to go before we will see how the connections are made."

—Lewis Thomas



18 They made the grade. Now it was their turn to evaluate the medical school, and they did so with varying degrees of humor, criticism, rhyme, and reason.



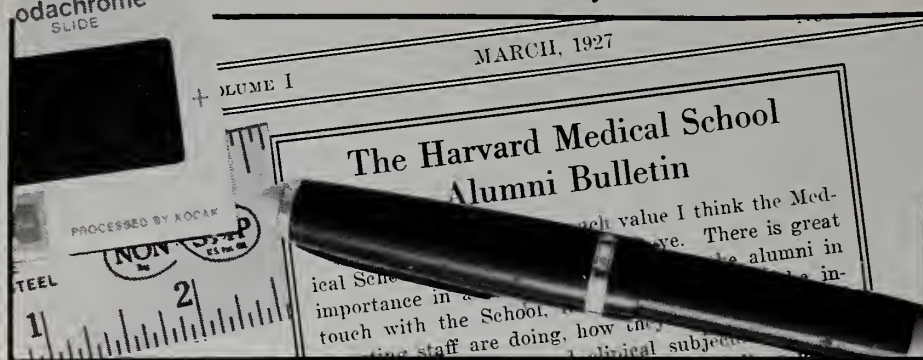
40 Six decades of graduates returned to HMS for scientific symposia, speeches, and just good old-fashioned fun. (Revelations of Alumni Day speakers are reprinted in this issue, beginning on page 26.)



57 A Touch of Class: Profiles of Alumni Week events—compliments of reunion chairmen—and portraits of the returning pentad groups offer a chance to reminisce, or to see what you missed.

INSIDE H.M.A.B.

Back in 1955, when he announced a major overhaul of the *Bulletin* format ("larger, more easily read, and, we hope, more attractive"), Editor John P. Merrill also reiterated the magazine's function: "to raise enthusiasm and interest in the Medical School and its operation by the dissemination of information and opinions in as attractive and provoking form as possible." Since the advent of Merrill's more ambitious *Bulletin*, *HMAB* has undergone a number of revampings—including the shrinkage of page size to which most magazines eventually succumbed—but all the while has remained faithful to its editorial objectives.



So again, some cosmetic surgery has been performed. The redesigned *Bulletin*, we think, befits an institution at the forefront of medical education, research, and patient care. Inside *HMAB* you will find the same fundamental elements—repackaged to be sure—in an effort to increase consistency within and among issues, and to avoid some of the confusion which has crept into past numbers.

A change of another sort has taken place recently. With this issue we bid farewell to David Bumke, assistant editor from the fall of 1979 to the fall of 1980, when he became managing editor. A gifted writer and editor, David's accomplishments here included assuming primary responsibility for the April 1980 issue ("The Generalist in 1980") and, following the departure of Deborah Miller, tackling last December's issue single-handedly. In this case, the *Bulletin's* loss is Rodale Press's gain, where David is now an associate editor. We miss him and wish him well.

—LWS

HARVARD MEDICAL

ALUMNI BULLETIN

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LETTERS

THE MAIL BAG, THIS TIME AROUND, WAS A MIXED BAG.

SOBERING THOUGHTS

THE RECENT DEATHS BY SUICIDE OF two of my colleagues and friends have jolted me out of the usual flippant banter with which I communicate with the *HMAB*. It is an immensely sobering and painful thought to realize that out of my medical school class—a cohort of people in their late thirties—we have already lost six of our members, two through acts of God, one uncertain, and three quite definitely by their own hands.

I fear that this is no more than one of the painful realities in an unbelievably demanding field; yet I feel that we do not, as a group or as a profession, pay sufficient attention to this factor in our lives. It provokes a great deal of reflection concerning mortality and stress, as well as our ability to help our colleagues when they need it.

Thomas G. Gutheil '67

HMS EXONERATED

MY RESPONSE TO CHARLES LE BARON'S book, *Gentle Vengeance*, as described in the blurb I received from his publisher, is that by the time an individual reaches medical school his character and personality are pretty well developed.

Thinking back to the members of my own class, I believe that medical school did not change their characters or their approach to other people in any significant way. Those who were hard and cold remained hard and cold, and those who were warm and kind remained warm and kind. I feel that the demands on doctors are heavy enough to justify a measure of challenge and discipline, and I do not believe that the challenge and discipline imposed upon us were excessive or harmful; rather, they helped improve our performance under pressure.

The editors welcome letters from readers, particularly in regard to articles published recently in the Harvard Medical Alumni Bulletin. Letters should be brief, double spaced, submitted in duplicate, and marked "for publication." Not all letters can be used; those accepted will become the property of the HMAB and may be edited, although we are unable to provide pre-publication proofs.



I objected to many things about our medical school curriculum, including what to me seemed an excessive focus upon laboratory science, which I think bears very little upon my daily work as a practitioner. However, the idea that Harvard Medical School corrupts and hardens its innocent recruits is mistaken. If we come out of it corrupt and hardened, it is not the school's fault.

Craig B. Leman '52

Editor's Note: Gentle Vengeance is reviewed on page 5 of this issue.

SMITH LEGACY, CONT'D.

I VERY MUCH ENJOYED YOUR ARTICLE in the February issue of the *Bulletin* entitled "The Legacy of Nathan Smith" by Gordon Donaldson. Of particular interest was the map published in 1780 accompanying the article. If you know or Dr. Donaldson knows where that map is located I would like to write for further details.

Nathan Smith was a remarkable man and produced a remarkable family, particularly in their influence on the early development of medical

education in this country. His son, Nathan Ryno Smith, was founder of Vermont Medical School and the medical school in Bowdoin, Maine; one of three founders of Jefferson Medical College; and then long-time professor, of surgery at the University of Maryland Medical School. During his tenure in Baltimore he did a four-month annual *locum tenens* in Louisville, Kentucky, teaching at the Transylvania University. There is even more to the Smith family influence on medicine, but that father-son combination is awesome enough.

Kenneth E. Livingston '39

Editor's note: The map to which Dr. Livingston refers is from the Harvard University map collection.

CANADA'S BEST:

THE CONTINUING SAGA

I READ WITH INTEREST THE SCHOLARLY debate concerning the identity of the subject of the portrait in the Vanderbilt Hall common room, purported to be Dr. Best, but apparently

CONTINUED ON PAGE 4

LETTERS

CONTINUED FROM PAGE 3

John P. Cowin.

Identity in science may be a chancy thing, and for every minor and corrected error such as this we may find a more consequential confusion or footnote to history. I refer to the comment in Dr. Barton A. Brown's letter to the effect that an (unidentified) instructor in biochemistry at HMS had come to the same conclusions as Banting and Best, but had not published when they did. I believe that instructor was Dr. Harry Trimble, still a member of the HMS biochemistry faculty when I was a student. We knew well as students that he had been narrowly beaten for recognition in the discovery of insulin and that his single other claim to a niche in history lay in his discovery that the Dalmatian dog, like man and unlike other dogs, excretes uric acid in its urine.

The vagaries of academic life are many; and success may depend on character, entrepreneurial ability, and a host of other factors in addition to scientific acumen and teaching excellence. Dr. Trimble, retiring at less than professorial rank and bypassed in the annals of history of medicine and science, is an example. Perhaps Ms. Sunday would wish to supplement her stellar article with a note about this forgotten figure.

Robin W. Briehl '54

SEE HOW THE NEW SHOE FITS

Note: The following "letter to the editor" was sent to Gordon Scannell from a certain cockroach he knows, along with the request that we share his poem with our readers.

well boss i saw mehitabel
the other day
out in pi alley
scampering whiffle snoot
says she i see
you have produced a
nostalgic bonanza and
i hear that you have some
new ideas too well
it will be fun to see how
the new shoe fits
and how the alums like it i
hope they let you know
wotthehell archy toujours gai
is my motto theres life
in the old dame yet
and off she went to find
freddy the rat yours
for crime

archy

ALAN GREGG AND AL ANON

CONGRATULATIONS ON THE SPRING
1981 *Harvard Medical Alumni Bulletin*—a

magnificent issue!

One small correction: Alan Gregg was a member of the class of 1916, not 1910. He started his internship in medicine at the MGH in July, 1916.

You could well be puzzled as to how I happened to spot this error. For some time I have been interested in writings by and about Alan Gregg, although I had not read the 1936 essay from the *Bulletin*. Several small collections from his impressive papers and lectures have been published, including "The Futherance of Medical Reserach" (1941), "Challenges to Contemporary Medicine" (1953), and "For Future Doctors" (1957). I highly recommend a 1967 biography, entitled *The Difficult Art of Giving—The Epic of Alan Gregg*, by Dr. Wilder Penfield. The combination of Penfield writing about Gregg cannot be surpassed!

Arthur J. Linenthal '41

Wyman Richardson's treatise, with skill,
Showed that some of us gamesmen who will,
While enjoying our sports,
Take occasional snorts
Yet maintain our proficiency still.

Al Anon

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BOOK MARKS

'VULNERABILITY' COMES TO HARVARD MEDICAL SCHOOL

GENTLE VENGEANCE: An Account of the First Year at Harvard Medical School by Charles LeBaron, Richard Marek Publishers, New York, 1981.

BY GEORGE S. RICHARDSON '46

The author, a 34-year-old humanities major who by his own account had spent ten years working in hospitals and institutions for the poor (notably as a conscientious objector in a large public hospital in San Francisco, and at a residence for retarded people, the Lower Manhattan Rehabilitation Center) was admitted to Harvard Medical School in September of 1978. He had graduated from Princeton and much later had prepared for medical school by taking night classes at the School of General Studies of Columbia University, recognizing with some disgust that the task was not to learn chemistry and physics but to pass the MCAT—an examination whose format excludes multistage chemical syntheses and complicated mathematics. His insight was correct: his score was in the 90th percentile in both subjects. He thought of applying only to the University of California at San Francisco, then added Harvard "at random."

Interviewed at HMS, he was challenged with the question, "Why do you want to become a doctor?" He was unable to articulate deeply felt aspects of his answer at the time. The book gives that deeper answer: in order to carry out "Gentle Vengeance" on the "flippant, harsh, cynical" doctors "I'd gotten to know so well... from my days in the hospitals"—a vengeance consisting of overcoming evil with good (implying, but not citing, Romans 12:19-21). He would "be kind where everything demanded harshness, haste, cruelty." This would be possible for him only if he were able to save a precious essence of sweetness and kindness in himself from loss through anger or discouragement. The second, equally important purpose of his book was to save that precious essence by capturing it on paper before another year at Harvard Medical School destroyed it entirely.

His social and family history are pertinent. He spent his childhood in poverty on East 111th Street in Manhattan, an only child because of tuberculosis in both parents. The death of both mother and father are movingly described. In both deaths the inhumanity of the system of



The cartoon is of an institution whose curriculum results from the preoccupations and needs of the teachers rather than those of the students, an intellectual sweat shop that sweats out any true scientific curiosity or imagination and recognizes no need for compassion.

medical care for the poor is clearly implicated. The essence of their nuclear family is caught in a poem written by his father and found among the father's effects. It reads like a Latin inscription:

Three loves I had,
Mother, wife, son.
From my mother, I took.
With my wife, I shared.
To my son, I gave.

Other autobiographical details suggest that the author came to HMS like a cartoonist with a scene already drawn, ready to be filled out with

sharp caricatures of the heads of teachers and classmates. The cartoon is one of an institution whose curriculum results from the preoccupations and needs of the teachers rather than those of the students. It is an intellectual sweat shop that sweats out any true scientific curiosity or imagination and recognizes no need for compassion. It is irrelevant to the problems of large public hospitals, or residences for retarded people, or East 111th Street. It threatens to take the compassionate young and make steely robots out of them. (The cover artist's cartoon is a red-hot branding iron in the form of the letter H.) Set against this is the self-made icon of this quixotic author, whose third and unavowed purpose in writing is to display himself as the bearer of a "little vial of sweetness and kindness," located not quite in the heart but "at stomach level."

How can a book about the experiences of being a first-year student at Harvard Medical School be made interesting enough to sell? A major reason is that, unlike the flat account just given, it is skillfully written with a continuously varied texture that shifts between HMS and vacation adventures and autobiography, and from

CONTINUED ON PAGE 6

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narrative to dialogue to scientific exposition and even to poetic rhapsody. LeBaron's ear for dialogue is excellent, but one is probably well-advised not to consider anything here as strictly reportorial. The rhapsodies are a poetry-science that reaches towards the writings of Lewis Thomas.

The major attraction of the book for many readers, of course, will be the expose of HMS that it appears to contain. The flap copy and the ads make the most of it. The advertising headline is completely misleading about HMS and about the book: "HARVARD IS THE BEST MEDICAL SCHOOL IN AMERICA. UNLESS YOU WANT TO LEARN HOW TO TREAT A PATIENT." After all, the author is writing about his *first year* at HMS. In the book he confesses that he was surprised to learn that most of the first-year teachers were not M.D.s but Ph.D.s—a realization brought about because they didn't bring up experiences with patients in their teaching! He ridicules the new undergraduate societies, imagining them to be old institutions populated by elderly graduates (p. 83). While flaunting an ignorance of Walter Cannon, he is clearly also ignorant of Francis W. Peabody, with his famous dictum on caring for the patient, plus another that deserves equal fame: "The treatment of a disease must be completely impersonal; the treatment of a patient must be completely personal."

Brimming with the poetry of science like another P.B. Shelley, the author faults his teachers, especially the professor of biochemistry, for giving facts rather than lyrics; later, he credits the same professor with indulging in poetry in his very last lecture. But does a student who brings his own inspirational poetry require more of the same from the instructor? Isn't his inspiration a commitment to be humble before the facts, like all good scientists, and press on? Doesn't one expect this even more from a student like this, who comes from a humanities background? Doesn't such a student expect that his struggle will be harder than that of science majors who are also younger and closer to their college courses? The older student who commits at last to medicine often, as I have seen, embraces it like a prodigal son. As one said to me, "Work? I was so interested—I'd waited for this so long—I soaked it up like a blotter." Exceptional, no doubt, but the reviewer in the HMS undergraduate newspaper, *The Present Illness*, and the views of my own students are not in agreement with this author's scenario.

Ironical that our Quixote arrived bringing that special trendy property of "vulnerability" just as HMS was getting its new deanship into place. (Vulnerability, be it noted, is the reverse of Osler's "Aequanimitas.") The new administration should be pardoned for some initial confusion in their responses to student demands for abolition of Saturday classes! Even in this book it is clear that the new deanship is nothing

if not concerned with, and oriented towards, the students; and it is painful to see the efforts of such good people caricatured here.

This student, like others before him, will learn how to treat a patient at HMS, because HMS is also its teaching hospitals and their innumerable caring physicians. He'll have bad examples as well as good ones, of course. He'll find others beside himself who also carry poetry and compassion with them. As he knows, and acknowledges, one John Enders, with all his difficult lectures on immunology, is worth more than a thousand student volunteers helping to nurse respirator patients.

LeBaron concludes that Harvard Medical School's purpose is to produce generals, not soldiers, and "generals do not fight in the trenches" (p. 97). There is certainly strong precedent for this view of HMS. At the centennial exercises of the medical school on October 17, 1883, Harvard's President Charles W. Eliot stated that the recent increased entrance requirements and more demanding period of study at the medical school would prepare its graduates "to enter, not the overcrowded lower ranks of the profession, but the higher, where there is always room." In a later address, given at a meeting of the Cancer Commission of Harvard University on April 13, 1910, he also said:

A multitude of good objects for the expenditure of private money in the hope of great public advantage is presented to public-spirited people in these days. We can, however, classify these efforts into two groups. The first group contains the efforts to palliate suffering—visible, evident, plainly before us—the efforts for the alleviation of miseries, sufferings, diseases in individuals. The Christian Church has almost from the beginning exerted itself strongly in this direction, not always wisely, but it has exerted itself for the palliation of misery established and visible. The second group of philanthropic efforts are palliative in part, but they are something better—they are efforts to build defenses, to contrive and put into execution preventive measures and remedies. The second group I may call constructive measures. They resemble the educational effort, which is largely constructive in its nature, building up mental capacity and moral character.

Charles LeBaron may be credited as being among those who have challenged Harvard Medical School in its third century with the problem of finding constructive measures for the sufferings of the incurable poor.

(The above quotations, and much other pertinent material, are to be found in that wonderful book *To Work in the Vineyard of Surgery: The Reminiscences of J. Collins Warren*, edited by Edward D. Churchill, Harvard, 1958. I strongly recommend it to Charles LeBaron.)

PLUS CA CHANGE?

We're in class from eight-thirty in the morning till five at night, Monday through Friday—forty hours a week. (*Gentle Vengeance*, p. 179)

It was 35 years ago that I was a lecturer in the Harvard Medical School for one winter; at that time lectures began in the school on North Grove Street at eight o'clock in the morning and went on steadily until two o'clock—six mortal hours, one after the other, of lectures, without a question from the professor, without the possibility of an observation by the students, with no interchange of thought between teacher and student, none whatever, just the lecture to be listened to, and possibly to be taken notes of. (Charles W. Eliot, remarks made at a meeting of the Boston Society for Medical Improvement on March 5, 1900)

[The professor] gets to his feet in the back and answers... "In order to write Chinese, you must memorize thousands upon thousands of ideographs. A cultivated writer may know ten thousand. In this course, we will use as our vocabulary about a hundred and fifty or two hundred compounds. I don't think it's unfair to ask you to remember their structures, complex or not, especially since biochemistry is considerably more important than Chinese." He gets roundly, though half-humorously, hissed for this... (*Gentle Vengeance*, p. 41)

We are too apt to treat students as freight rather than passengers, as things to be instructed rather than human beings. I feel we are too fond of treating the student as if he were... a goose to be stuffed. We fail to think the opinions of students about their education are of any value. Yet their opinions are just as good as ours and besides, theirs are fresh, while ours are canned. (A. Lawrence Lowell, on being introduced to the medical faculty after assuming the duties of presidency of Harvard, May, 1909) ♦

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PULSE

MATEP: NOT QUITE FULL STEAM AHEAD

Is MATEP a nonprofit organization? This is the latest controversy generated (or is it co-generated?) by the Medical Area Total Energy Plant, designed to provide steam, chilled water, and electricity to the Harvard Medical, Dental, and Public Health Schools, as well as surrounding hospitals. Underlying this question—and the real source of concern for opponents of the facility—is whether MATEP, by dint of its nonprofit status, can claim exemption from a recent EPA ruling which states that new emission sources must employ the best available technology to control pollution.

Precedents for exemption from the so-called "Prevention of Significant Deterioration" (PSD) requirement exist, notably the cogeneration plants at New York University and Cornell University Medical School. On May 27, at the request of Governor Edward J. King, MATEP also received such an exemption; and work on the diesel portion of the plant was scheduled to resume, with an expected completion date of spring, 1982. Opponents have appealed the decision in federal court.

At issue, of course, is whether MATEP can be considered part of an educational or health institution inasmuch as it will supply power to schools and hospitals. Leslie Carothers, acting regional director of the Environmental Protection Agency, apparently thinks it is. "Although the facility, viewed in isolation, is a power plant... its purpose is to provide the total energy requirements of seven health or educational institutions," she noted, adding that "an exemption for any facility from PSD requirements does not mean that the public health will go unprotected."

Because of huge construction cost overruns and a nearly tenfold increase in the price of oil, MATEP is expected to operate at a deficit in its initial years. However, if in the future the facility should begin to sell electricity at a profit to outside companies like Boston Edison—as opponents have suggested it might—the EPA could recall its decision for review.

The steam and chilled water portion of MATEP was approved by the state Department of Environmental Quality Engineering (DEQE) in 1977, and was put into service last July. Work on the more environmentally questionable diesel portion, which will produce most of the electricity, was halted in 1978 to allow



DEQE to address health issues raised primarily by residents of two adjacent communities, Brookline and Mission Hill. After four years of review, the DEQE granted an operating permit this past May (the same month that the PSD exemption was handed down), finding that the diesels, run under stringent conditions, would comply with all air requirements and would not endanger public health.

Among the operating conditions cited was the stipulation that MATEP maintain constant air pollution monitors at Route 9 and Chestnut Hill Avenue, as well as immediately east and west of the plant itself. If any of the three monitors should record nitrogen oxide levels of 250 micrograms per cubic meter or more (about 26 percent of the level at which nitrogen oxide is believed to be harmful to health), MATEP would be forced to shut down three of the six diesels and reduce the remaining three to half power.

DUPONT GIVES GENETICS A LINK TO INDUSTRY

As the inchoate department of genetics at HMS begins to take shape, a five-year, \$6 million research grant from the DuPont Company of Wilmington, Delaware, has given it a

solid financial base. The funds will support work conducted under the direction of Philip Leder '60, John Emory Andrus Professor and chairman of the genetics department (*HMB*, February, 1981).

The Harvard-DuPont agreement—one of a number of recent scientific collaborations between industry and academia—will give the grantor access to new basic information and will supplement genetics research already underway in its laboratories. Should this new knowledge eventually spawn a patentable product or process, the patent would belong to Harvard, while DuPont would have exclusive rights to develop or market it commercially. "There are no provisions in the grant that will in any way control, inhibit, or restrict the conduct of the research or publication of the results," DuPont officials noted.

Given this latitude, Leder will continue research he began at the National Institutes of Health to illuminate the organization of mammalian genes, and the mechanisms by which genes direct the assembly of two types of essential proteins—globin and antibodies. While it is known that each individual is able to mount an immune response to literally millions of different antigens, the specific hereditary process which governs this capability remains a mystery.

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PHILIP LEDER

CONTINUED FROM PAGE 7

The solution to this, investigators agree, should have broad applications for the treatment and diagnosis of disease.

The trend toward large-scale industrial support of basic research in the university has sparked controversy within the scientific community, but it may turn out to be a much needed marriage of convenience. At Harvard, according to HMS Dean for Resources Alan Olsson, such grants can provide for greater flexibility in the use of research funds than those from the government, with their mandatory itemized budget proposals and stringent reporting requirements. Moreover, federal grants for research have an uncertain future, and are presently slipping behind the rate of inflation. "We don't see that corporate funding can replace government support on a dollar-for-dollar basis," Olsson explained, "but it is complementary."

The medical school's first major alliance with industry was formed in 1974, when the Monsanto Company pledged \$23 million over a twelve-year period for investigations on the biology and biochemistry of organ development. This past May, the Massachusetts General Hospital signed a ten-year, \$50 million agreement for genetic research with Hoechst A.G., an

international chemical company based in Frankfurt, Germany.

MGH SURGICAL FELLOWSHIPS AWARDED

Five distinguished surgeons from the Massachusetts General Hospital—all alumni of HMS—have been honored with fellowships established in their names. The *raison d'être* of the new MGH surgical fellowship program is "to make possible an intensive period of scholarly work during the residency training period for selected members" of the hospital's surgical house staff. The program, as described by W. Gerald Austen '55, Edward D. Churchill Professor and chairman of the department of surgery, is supported by an endowment established with funds contributed by patients of the five surgeons. The awards carry a full stipend, and fellows are selected on the advice of a departmental committee.

The first group of recipients is:

Richard Cambria: The Robert R. Linton Fellowship in vascular surgery. Dr. Cambria will work with Dr. William Abbott to investigate the influence of the compliance of a vascular graft upon its likelihood of remaining patent.

Randall D. Gaz '77: The Claude E. Welch Fellowship in general surgery. With Dr. Henry

M. Kronenberg of the endocrine unit, Dr. Gaz will introduce the gene for bovine parathyroid hormone into simian virus 40 (SV40) and will then infect cells with the hybrid virus. These cells should make and secrete parathyroid hormone. He will then alter the parathyroid hormone gene and study the functional implications of such alterations.

Craig Lillehei '76: The Marshall K. Bartlett Fellowship in general surgery: Under the guidance of Dr. Henry J. Winn in the transplantation unit, Dr. Lillehei will study the immunological mechanisms involved in the rejection of skin and tumor transplants.

Ronald Tompkins: The Edward D. Churchill Fellowship in cardiothoracic surgery. Dr. Tompkins will be working toward a Ph.D. degree, performing a series of experiments related to atherosclerosis. Together with Professor Clark K. Cotton of MIT, he will employ a new quantitative technique to study the transport of lipids into the thoracic aortae of rabbits.

A fellowship in plastic and reconstructive surgery, bearing the name of **Varaztad Kazanjian**, will not be awarded this year.

ALUMNI RETURN PROGRAM: A PROGRESS REPORT

Last January, some thirty years after graduating from HMS, a pediatrician from the Berkshires returned here for a week-long refresher course in adolescent gynecology. He sat in on conferences at Beth Israel's OB/GYN department with Dr. Johanna Perlmutter. He spent a ten-hour day with Dr. Donald Goldstein at the Children's Hospital Medical Center. When he returned to western Massachusetts it was with newly acquired knowledge in state-of-the-art clinical techniques as well as basic science information on female hormones.

The program, he explained, helped him to accomplish three things: it added to his current store of data in the field; it answered some puzzling questions that had cropped up in his practice; and it reaffirmed a sense of confidence in his own abilities. Between August 1980 and May 1981, twenty-six other HMS alumni had comparable experiences.

You may remember a letter which went out to all graduates of HMS just over a year ago. "Dear Alum," it read, "The Harvard Medical Alumni Association and the Department of Continuing Education are offering an innovative and personal form of continuing medical education. The proposal has the strong support of Dean Tosteson. It has been reviewed and approved by the department chairmen and the Faculty Council of the Medical School. An *ad hoc* committee has considered the benefits as well as the possible snags in this proposal. Now it is ready to present to you, with the hope that it will suggest a way in which HMS can become a unique resource in your lifetime pursuit of learning."

The objective of the program is to create a personal continuing medical education plan

tailored to individual needs, that will take advantage of special experiences, as well as ongoing rounds, conferences, seminars, and lectures at HMS and its affiliated hospitals. The "classrooms" may include operating amphitheatres, radiology units, clinical laboratories, intensive care units, and emergency wards.

Heading up the project is Nancy Bennett, Ph.D., Director of Educational Development and Evaluation at HMS. When an alumnus expresses interest in the program, Dr. Bennett reviews the request with a faculty member (who is also an alumnus) knowledgeable in the particular area of interest, as well as Harvard's resources in that area. She is then able to match the prospective visitor with one or more appropriate faculty members. Returning alumni have spent from two to 126 hours at HMS (the mean length of onsite work is 31 hours). AMA category CME I credit is granted accordingly by the department of continuing education upon completion of the visit. There is no tuition charge, although the participant is expected to cover the cost of his or her own travel and living expenses.

Dr. Bennett reports that last year's letter announcing the program yielded 90 replies by the end of September. "A total of 63 of those requested specific information about setting up a course, while 26 replies requested information for future reference or simply offered comments on the program. Since the fall we have had an additional 15 responses," she noted.

Follow-up letters solicited from participants immediately after the program and again, three months later, have helped to upgrade the experience for subsequent visitors. Several letters have stressed the importance of thoughtful pre-planning: Prior to attendance, alumni should consider what they intend to derive from participation in the program, and should specify as closely as possible the kind of information they hope to gain. "Clinical programs appear to have higher success rates," Dr. Bennett pointed out. "In any event, having one's goals clearly in mind prior to the visit usually results in a better designed course."

Besides the assimilation of new facts and the review of things forgotten, there are apparently some other, not unpleasant, side effects of the program—as one returnee put it, "the rekindling of the warm feelings we alumni have about Harvard as a unique medical school. It is truly an anamnestic response, and I had vastly underestimated it before my visit. Being disgorged from the old (as I shall always think of it) MTA, dodging cabs to get to the White Building, standing before the oil portraits of those who were to us the stuff of life and science, had an effect which I even now four months later recall with a good deal of nostalgia."

Individuals who wish to receive additional information about the Alumni Return Program should contact Nancy Bennett, Ph.D., Department of Continuing Education, Harvard Medical School, 25 Shattuck Street, Boston, MA 02115 (617) 732-1526. ♦



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ABOUT THE AUTHOR

James A. FitzGerald, M.D., F.A.C.S., F.A.C.O.G., Diplomate Am. Board of Ob. Gyn., was born, reared, and educated in Boston, Massachusetts. He received his B.S. degree from Boston College and his M.D. from Harvard. Dr. FitzGerald is a former teaching fellow in gynecology at Harvard Medical School

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WILLIAM O. MOSELEY: FROM THE MASS. GENERAL TO THE MATTERHORN

BY ROBERT K. BROWN '37

After graduating from Harvard Medical School in 1878, William O. Moseley, Jr., travelled to Europe with his friends J.W. Elliot, J.J. Minot, and H.L. Morse to work for a year at the clinics in Vienna, Paris, and Berlin. An expert alpinist, Moseley returned to Europe the following summer and made several climbs in Switzerland with an English friend, A.E. Craven. On August 13, 1879, accompanied by two Swiss guides, they undertook the ascent of the Matterhorn. After reaching the summit the next morning, they began the climb down, roped together in the usual precautionary fashion. Moseley complained several times that the rope was a hindrance but was persuaded by his companions to keep it on. Finally, at a point on the northeast ridge, he insisted on detaching himself. Not long after, as he vaulted over a large, smooth projecting rock, his foot slipped, he fell on his back and—unable to stop—tumbled 2,000 feet down the east face to the top of the glacier below. His body was recovered three days later and buried in an English churchyard in Zermatt. It was subsequently transferred to Mount Auburn Cemetery in Cambridge, Massachusetts.

Those who have tackled the Matterhorn years hence may have learned that the small shelf from which the 30-year-old doctor fell has been named the Moseley Platte. Closer to home, the Moseley name has a special significance for many of those beginning the long, hard climb up the professional ladder, as well as those who have already found a niche in the walls of academe.

William Oxnard Moseley, Jr., was born in Boston on October 8, 1848, to the Rev. William O. Moseley and Caroline Fairbanks Moseley. William Sr., a graduate of Harvard College (1836), had studied law and theology, and occupied Unitarian pulpits at North Chelsea and Scituate. The family genealogy has been traced back to the time of King John in England, where in 1599 a Moseley was Lord Mayor of London. Another scion, John, emigrated to Dorchester, Massachusetts in 1630, and one of his descendants served as captain in the Revolutionary Army at Bunker Hill.

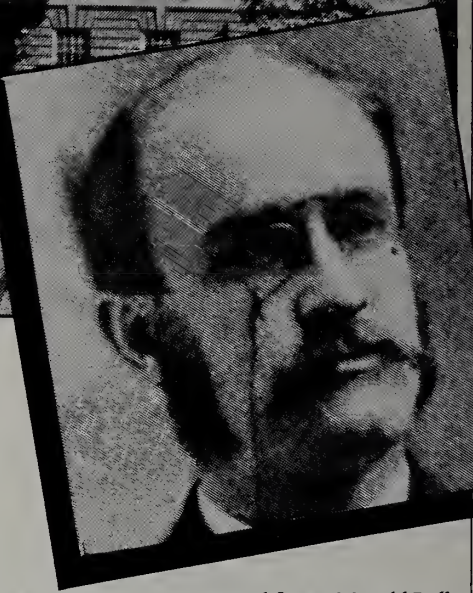
Shortly before William, Jr.'s eighth birthday his mother died, and he was sent to Florida to



WHEN QUERIED, FOURTEEN OUT OF FIFTEEN FORMER HOUSE OFFICERS AT THE MGH WERE UNABLE TO IDENTIFY WILLIAM O. MOSELEY (INSET), ALTHOUGH A BUILDING ERECTED IN HIS MEMORY HOUSED INTERNS AND RESIDENTS THERE FOR NEARLY SIXTY YEARS.

live with an aunt for three years. On his return he was enrolled in the Boston Latin School where he took first and second prizes in declamation. He entered Harvard College in 1865, graduating with honors four years later. Most of the next five years he spent in Europe and the Near East. He became an accomplished mountain climber, making several recorded ascents, and scaled Mount Blanc with his college classmate, James Bourne Ayer (HMS 1873).

After beginning the study of medicine in Paris, Moseley entered Harvard Medical School in 1874. Three years later he was appointed house physician at the Massachusetts General Hospital, serving with J.J. Minot, H.L. Morse, J.W. Brannon, William Mason, and J.W. Elliot. "We were a congenial set," Elliott remembered, "and besides doing a great deal of hard work, we enjoyed ourselves extremely. We all slept in



a large room on the ground floor of the old Bullfinch Building. Moseley greatly enjoyed the invention of practical jokes. We may have broken the rules occasionally, but were kept in order by Dr. Whittemore, the superintendent, a perfect gentleman who governed us with justice and kindness.

"Moseley, somewhat older than the rest, and having a Continental experience, was easily our leader. He had a rare suavity and geniality which made him extremely good company. In short, he was a man of the world in the best sense. He was not a grind, but had the faculty of grasping the essential points of a subject. He developed marked ability and rare good judgment, was faithful and kind to his patients, and gave promise of becoming a brilliant member of

the profession. His senior physicians relied on his observation and often entrusted to him important treatments of the patients."

Fifteen years after Moseley's fatal accident, his father died, leaving a bequest of \$20,000 to the Massachusetts General Hospital "as a trust fund in memory of my dear son," the income to be used for beds and general purposes. A second bequest followed suit, in the amount of \$50,000 "for the purpose of establishing a Professorship in the Medical School of Harvard College." When John Collins Warren became the first Moseley Professor of Surgery on June 28, 1899, a precedent was set for one of the most distinguished appointments in the school's history. Maurice Howe Richardson (1907-12), Harvey Cushing (1912-32), Elliot C. Cutler (1932-47), Francis D. Moore (1948-76), and John A. Mannick (1976-present) were subsequently ensconced in the Moseley-endowed chair.

He developed marked ability and rare good judgment, was faithful and kind to his patients, and gave promise of becoming a brilliant member of the profession."

The establishment of a travelling fellowship in Moseley's name was an especially fitting remembrance of the young adventurer. It was in 1911 that Rev. Moseley's second wife earmarked \$60,000 to provide two travelling fellowships to Europe for outstanding students or graduates; by 1922, the fund was able to support three. Since the first award was made to Gerald Blake in 1914, the roster of Moseley Travelling Fellows has multiplied to 107, and now lists such luminaries as Samuel A. Levine, Henry R. Viets, Arlie B. Bock, Herrman L. Blumgart, Francis C. Newton, Chester M. Jones, Tracy Putnam, Tracy B. Mallory, Frank Fremont-Smith, Edward D. Churchill, James C. White, Harlan F. Newton, Paul Dudley White, William T. Salter, Fuller Albright, Alexander Marble, Edward B. Benedict, Ashton Graybiel, Oliver Cope, Henry K. Beecher, Sidney Farber, Austin Brues, Champ Lyons, David G. Cogan, Paul C. Zamecnik, Edward J. Beattie, Jr., Benson B. Roe, and George W.B. Starkey.

Although the Moseley Memorial Building at the MGH—which had lodged house officers for more than sixty years and provided headquarters for the Treadwell Library—has recently been razed, the memory of William O. Moseley will be sustained in a new ambulatory care center on that site. In the Moseley Memorial Room of the new center will hang the dedicatory plaque of the old Moseley Building, endowed in 1916 by the Reverend's surviving trustee. The Moseley memorials, which began on a personal level as expressions of a father's grief for the loss of his only son, have, in the span of almost a century, come to be synonymous with excellence in medicine at Harvard—a brilliant legacy that shows no signs of fading. ♦

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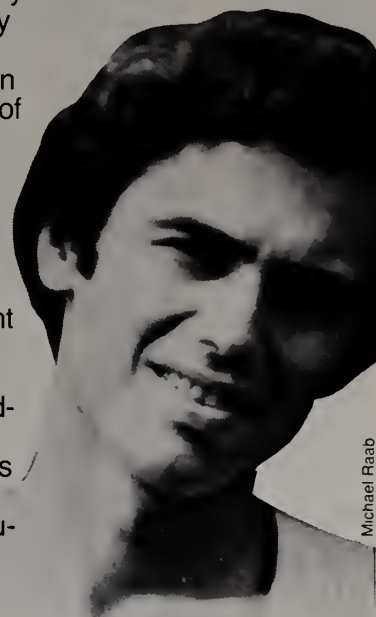
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GENTLE VENGEANCE Charles LeBaron



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Michael Raab

On Matters Of Doubt

BY LEWIS THOMAS

AN EXHORTATION TO CELEBRATE WHAT WE KNOW BUT TO REVEL, ESPECIALLY, IN WHAT WE DON'T KNOW.



IT USED TO BE SAID —AND my father was taught this at P&S in 1901—that medicine was all an Art, and that the skilled practitioner engaged in the Art needed, first of all, a deep understanding of other people's minds and a capacity for affection toward those minds; the body was a sort of black box, beyond any manipulation or control. Then, gradually, medicine turned into a sort of science; the human body became an object for scientific probing. It was then said, when I became a medical student in 1933, that the profession was part Art and part Science.

Now, with cascades of data rolling in to be learned by rote, it is said that medicine is becoming all Science, and what used to be called the Art has been lost somewhere and needs putting back. Some medical school faculties are debating the matter, arguing over the absence of the humanities in the premedical curricula, trying out new courses in philosophy and ethics; there are even a few departments called 'medical humanities'.

It is as though the Art and the Science were two totally different aspects of medicine, separate from each other and maybe even at odds with each other. I think

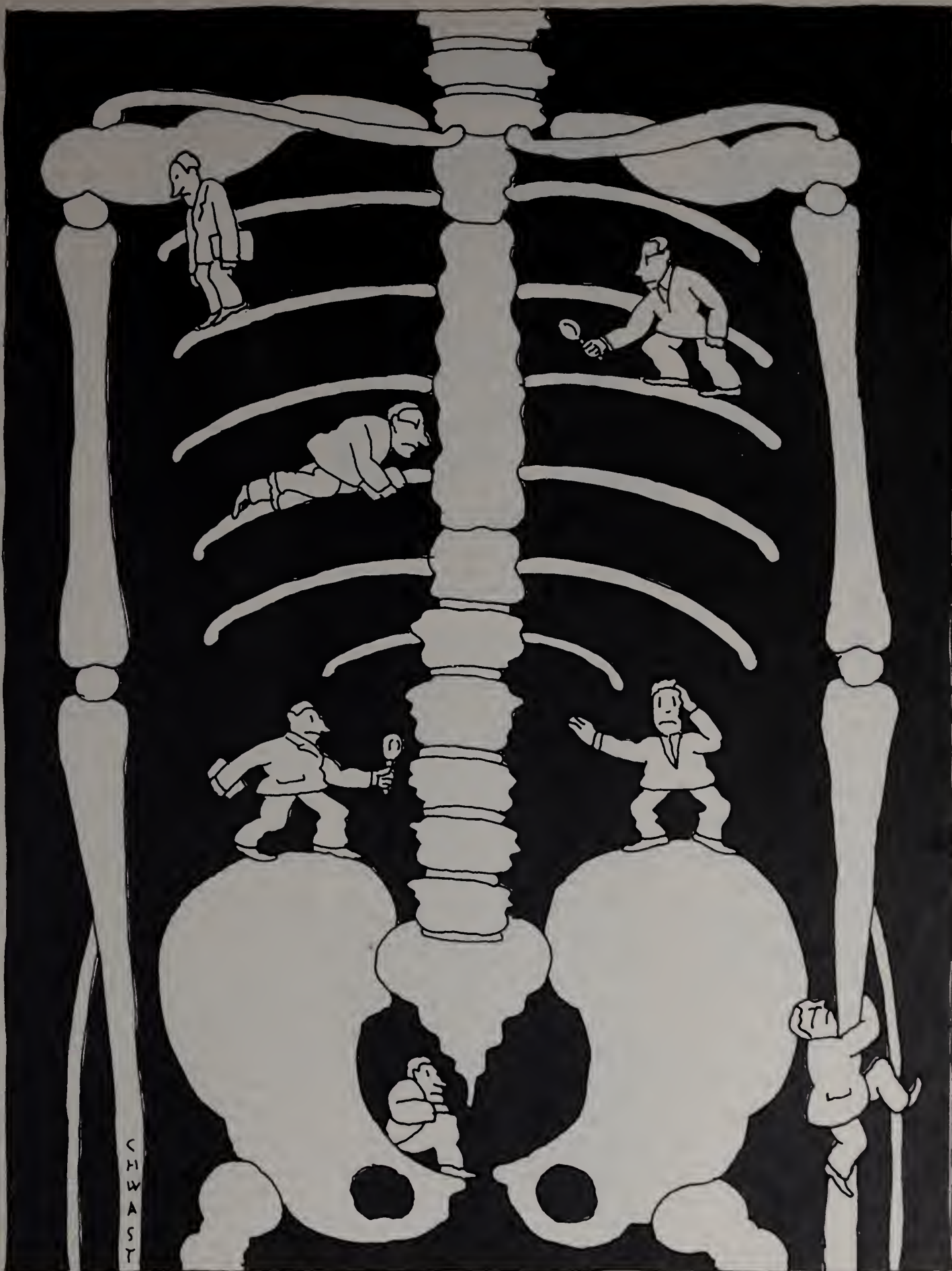
*Chancellor of the Memorial Sloan-Kettering Cancer Center, Professor of Pathology and Medicine at Cornell University Medical College, and author of the prize-winning *Lives of a Cell* and *The Medusa and the Snail*, Lewis Thomas '37 was the featured speaker at Class Day this year.*

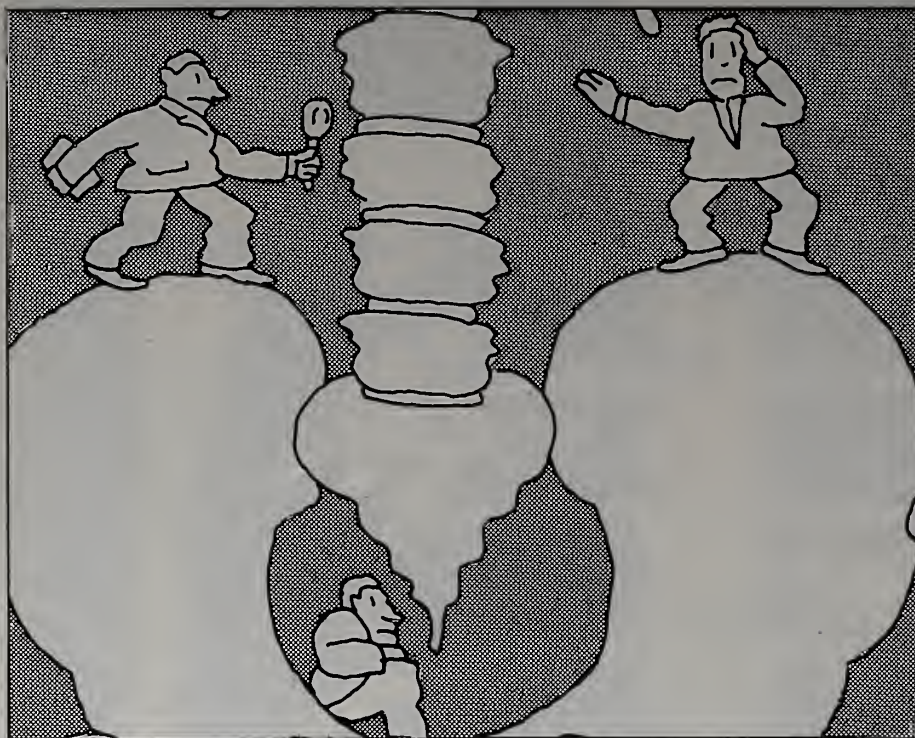
this is not so, certainly not necessarily so. It reminds me of the old argument about science and religion, and the not-so-old argument over the adversarial relation of science and letters.

The "two-cultures" controversy of several years back has quieted down some, but it is still with us, still unsettled because of the polarized views set out by C.P. Snow at one polemical extreme and by the British critic F.R. Leavis at the other; these remain the only two sides of the argument, no room between. At one edge, the humanists were set up as knowing, and wanting to know, very little about science and even less about the human meaning of contemporary science; they are, so it goes, anti-scientific in their prejudice. On the other side, the scientists were served up as a bright but illiterate lot, well-read in nothing except science, even—as Leavis said rather irrelevantly of Snow—incapable of writing good novels. The humanities were presented by one side in the dispute as made up of imagined, unverifiable notions about human behavior, unsubstantiated stories cooked up by the poets and novelists, while the sciences were said to deal parsimoniously with only the leanest facts, the hardest data, the least ambiguous realities of life.

The argument is shot through with bogus assertions and false images, and I have no intention of becoming entrapped in it here, on one side or the other. Instead, I intend to take a stand in the middle of what seems to me a muddle, hoping to confuse the argument by showing that there isn't really any argument in the first place. To do this, I must try to prove that there is in fact a solid middle ground to stand on, a shared common earth beneath the feet of all the humanists and all the scientists, a single underlying view of the world which drives all scholars, whatever their discipline—whether history or

CONTINUED ON PAGE 14





BEWILDERMENT is kept hidden in the darkest closets of all our institutions of higher learning, repressed whenever it seems to be emerging into public view, sometimes glimpsed staring from attic windows like a mad cousin of learning.

CONTINUED FROM PAGE 12

structuralist criticism or linguistics or quantum chromodynamics or astrophysics or molecular genetics. Or medicine.

There is, I claim, such a shared view of the world. It is called *bewilderment*. It is the family secret of twentieth century science, and of twentieth century arts and letters as well. Everyone knows this, but it is not much talked about. Bewilderment is kept hidden in the darkest closets of all our institutions of higher learning, repressed whenever it seems to be emerging into public view, sometimes glimpsed staring from attic windows like a mad cousin of learning. What we have been discovering in our time is that we really do not understand this place nor how it works, and we comprehend our own selves least of all. The more we learn, the more we are—or ought to be—dumbfounded.

It is the greatest fun to be bewildered, but only when there lies ahead the sure certainty of having things straightened out, and soon. It is like a marvelous game, but only when you have some way of keeping score, and this is what seems to be lacking in our time. The game is confusing, and too many of us are choosing not to play, settling back with whatever straws of fixed knowledge we can lay hands on, denying bewilderment, pretending one conviction or another, nodding our heads briskly at whatever we prefer to believe, staying away from the ambiguity of being.

We would be better off if we had never invented the terms 'science' and 'humanities' and then set them up as if they represented two different kinds of intellectual enterprise. For the life of me, I cannot see why we ever did this, but we did. Now, to make matters worse, we have these encampments not only at odds but trying to swipe problems from each other. The histor-

ians, some of them anyway, want to be known as social scientists and solve the ambiguities of history by installing computers in all their offices. The latest school of literary critics, the deconstructionists, want to become the ultimate scientists of poetry, looking at every word in a line with essentially the reductionist attitude of particle physicists in the presence of atoms, but they are still unaware of the uncertainty principle which governs any good poem: The observer cannot only change the thing observed, he can destroy it. The biologists have invaded all aspects of human behavior with equations to explain away altruism and usefulness by totting up the needs of genes; the sociobiologists are becoming humanists *manqué*, swept off their feet by ants. The physicists, needing new terms for their astonishments, borrow 'quarks' from Joyce and label precisely quantitative aspects of matter almost dismissively with poetically allusive words like 'strangeness', 'color', and 'flavor'.

We have, to be sure, learned enough to know better than to say some things about letters and about science, but we are still too reticent about our ignorance. Most things in the world *are* unsettling and bewildering, and it is a mistake to try explaining them away; they are there for marvelling at and wondering at, and we should be doing more of this.

I do not mean to suggest that we are surrounded by unknowable things. Indeed, I cannot imagine any sorts of questions to be asked about ourselves or about nature that cannot, sooner or later, be answered, given enough time. I do admit to worrying, late nights, about that matter of time. Obviously we will have to get rid of modern warfare and quickly, or else we will end up, with luck, throwing spears and stones at each other. We could, without luck, run out of time in what is left of this century, and then, by mistake, finish the whole game off by upheaving the table, ending life for everything except the bacteria, maybe—with enough radiation—even them. If you are given to fretting about what is going on in the minds of the young people in our schools, or on the streets of Zurich or Paris or Sidney or Tokyo or wherever, give a thought to the idea of impermanence for a whole species—*ours*—and the risk of earthly incandescence. It is a brand-new idea, never before confronted as a reality by any rising generation of human beings.

I have an idea, as an aside. Why not agree with the Soviets about just one technological uniformity to be installed at small cost in all the missiles, theirs and ours: two small but comfortable chambers added to every vehicle before firing, one for a prominent diplomat selected by the other side, one for a lawyer selected at random? It might be a beginning.

Here's a list of things, taken more or less at random, that we do not understand:

I am entitled to say, if I like, that awareness exists in all the individual creatures on the planet: worms, sea urchins, gnats, whales, sub-human primates, superprimate humans, the lot. I can say this because consciousness is so much a total mystery for our own species that we cannot begin to guess about its existence in others. A beetle has a tiny little brain, capable perhaps

of only two or three tiny little thoughts; but on that very small scale maybe it knows exactly what it should be doing next, maybe even worries about morality and its tiny version of dying. I can say that birdsong is the music made by songbirds for their own pleasure, pure fun, also for ours; and it is only a piece of good fortune that the music turns out to be handy for finding mates for breeding or setting territorial markers.

I can say, if I like, that social insects behave like the working parts of an immense central nervous system: The termite colony is an enormous brain on millions of legs; the individual termite is a mobile neurone. This would mean that there is such a phenomenon as collective thinking, which goes on whenever sufficient numbers of creatures are sufficiently connected to each other. It would also mean that we humans could do the same trick if we tried, and perhaps we've already done it, over and over again, in the making of language and the meditative making of metaphors. I can even assert that we are, as a species, held together by something like affection (what the physicists might call a "weak force"), and by something like love (a "strong force"), and nobody can prove that I'm wrong. I can dismiss all the evidence piling up against such an idea, all our destructiveness and cantankerousness, as error-proneness, built into our species to allow more flexibility of choice than is made available, say, to our gentler cousins the ants and the bees—and nobody can argue me out of this unless I choose to wander off to another point of view.

The sciences and the humanities are all of a piece, one and the same kind of work for the human brain, done by launching guesses and finding evidence to back up the guesses. The methods and standards are somewhat different, to be sure. It is easier to prove that something is so in science than it is to make an assertion about Homer or Cezanne or Wallace Stevens and have it stand up to criticism from all sides, harder still to *be* Homer or Cezanne or Stevens, but the game is the same game. The hardest task for the scientists—barely yet begun—is to find out what their findings may mean, deep inside, and how this piece of solid information, firmly established by experimentation and confirmation, fits with that unlike piece over there. The natural world is all of a piece, we all know this in our bones, but we have a long, long way to go before we will see how the connections are made.

If you are looking about for really profound mysteries, essential aspects of our existence for which neither the sciences nor the humanities can provide any sort of explanation, I suggest starting with music. The professional musicologists (tremendous scholars all, for whom I have the greatest respect) haven't the ghost of an idea about what music is, or why we make it and cannot be human without it, or even—and this is the telling point—how the human mind makes music on its own, before it is written down and played. The biologists are no help here, nor the psychologists, nor the physicists, nor the philosophers, wherever they are these days. Nobody can explain it. It is a mystery, and thank goodness for that. The Brandenburgs



and the Late Quartets are not there to give us assurances that we have arrived. They carry the news that there are deep centers in our minds that we know nothing about except that they are there.

The thing to do, to get us through the short term, the years just ahead, is to celebrate our ignorance. Instead of presenting the body of human knowledge as a mountainous structure of coherent information capable of explaining everything about everything if we could only master all the details, we should be acknowledging that it is, in real life, still a very modest mound of puzzlements that do not fit together at all. As a species, the thing we are biologically good at is learning new things, thanks to our individual large brains but thanks above all to the gift of speech that connects them, one to another, all around the earth. We can take some gratification at having come a certain distance in just the few thousand years of our existence as language users, but it should be a deeper satisfaction, even an exhilaration, to recognize that we have such a distance still to go. Get us through the next few years, I say, just get us safely out of this century and into the next, and then watch what we can do.

Watch indeed what we can do in medicine, and what you will be able to do in your professional lifetime. Keep a close eye on the deep gaps in your understanding of human illness today. They are just beginning to close, and the time will come—or I should say the time *can* come—when all the gaps will have vanished. If this is to happen there will be near-infinity of new things to be found out and comprehended, but all of these new things are somewhere within reach. To make sure, you will have to keep a sharper eye on the world at large, and do more worrying about its course, than any of the generations of our profession preceding yours. ♦

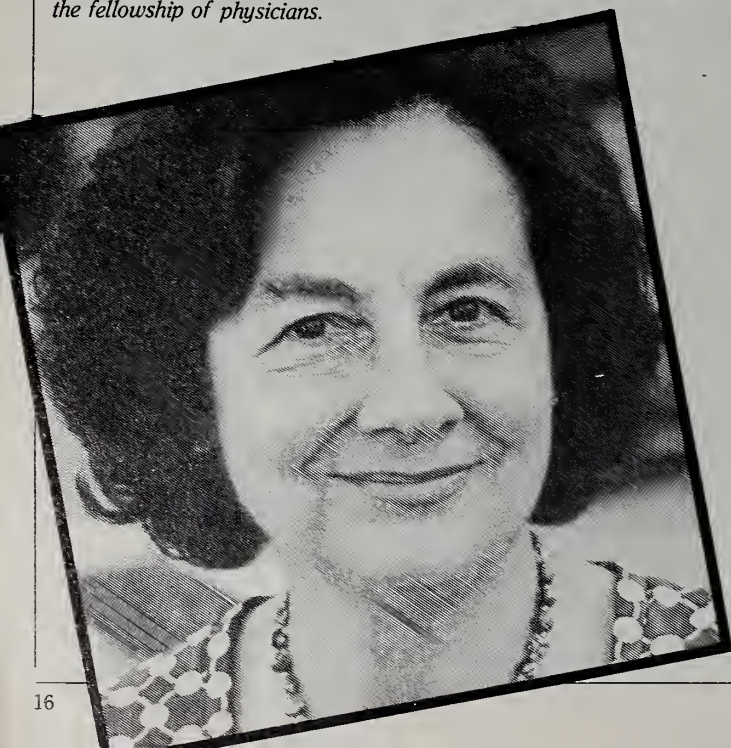
INSTEAD OF presenting the body of human knowledge as a mountainous structure of coherent information, we should be acknowledging that it is still a very modest mound of puzzlements that do not fit together at all.

Caring

◇BY CAROLA EISENBERG◇

My invocation is a plea for compassion for this commencement speaker. Consider my dilemma: This audience has at least three constituencies—the graduates, their families, and members of the faculty and staff. As a psychiatrist, I must be concerned for the mental health of graduates who have already been exposed to more than enough lectures to boggle the mind. Free of that hazard, their families are both proud of the accomplishment this ceremony celebrates and relieved—nay, overjoyed—at the prospect of no more tuition! Faculty and staff are sad at seeing so many friends leave but happy for them as well. What, then, is to be said at once to those sad and happy, those proud and relieved, and those with high levels of circulating anti-lecture antibodies? Three speeches are called for,

A psychiatrist by training, Carola Eisenberg is Dean for Student Affairs at Harvard Medical School. In Caring, her Class Day address, she relinquishes a special relationship with the graduates and welcomes them into the fellowship of physicians.



I think, one for each constituency, which will permit the other two quiet reveries until they are directly addressed.

Let me speak, first of all, to the families. I do so, not merely as a dean, but as a mother myself, one who is living through the joys and tribulations of seeing my own children through the various stages of medical education. What makes deaning a job I wouldn't trade for anything else is the opportunity to be a vicarious parent to your children now that I can no longer overprotect my own. I thank you for sending us the marvelous young women and men who make up this class: it is we who have been privileged to have had your sons and daughters here as students.

You have the right to be proud of what they are and what they have done; the fact is, they wouldn't be here without the support and encouragement you provided. In a more than trivial sense, you deserve a sheepskin no less than they do. However, don't get carried away and open an office; the law will take a dim view! Your children did the work; the diplomas are theirs. Still, although they may be too inhibited to tell you, I will: they couldn't have done it without you.

What makes this moment so rewarding is that it celebrates the admission of new members to a profession which provides the opportunity for self-fulfillment by helping others. Do not mistake me: I do not mean to celebrate doctors; they come in all shapes and sizes. What I celebrate is an ideal and the opportunity for its realization. Not all doctors live up to that ideal: clinical results sometimes fall short of intent; and doing everything that *can* be done isn't always what *should* be done.

Still, because of the accomplishments of medicine the impossible has become fact: Smallpox, which a decade ago claimed fifteen million victims in the developing world, has been totally eliminated. Surgeons today regularly restore mobility to the lame and the halt. Psychiatric patients who once faced prolonged hospitalization are now able to return to their homes. Infants not long ago doomed to premature death or crippling are born healthy.

Yet it has become the conventional wisdom to question the benefits of doctoring. Critics point out that life expectancy, which increased by more than twenty years in the first half of the century, has only grown by five years in the last quarter. Why should this be surprising? Death can be postponed but not prevented. If medical research succeeds, we will live better but not much longer. If we are lucky, we will keep in running order until we fall apart, all at once.

What our critics overlook is the difference medical care has made to the quality of life. Statistics on longevity take no account of the patient crippled by chronic arthritis who has been enabled to resume an active life by total hip replacement. She will still die at her appointed time but she will

CONTINUED ON PAGE 48

ILLUSTRATION BY JEANNE FISHER-GRUNDBERG



...ONLY A LETTER AWAY FROM CURING.

1981

CLASS DAY

Commencement is the crossroad when the past and the future collide; when four years of hard work is anticlimaxed in a two-hour ceremony; when friendships forged in a common bond of experience yield to geographic separation; when the relative security of school is surrendered for the responsibilities of work. Commencement—as anyone who has ever been through one can attest—evokes a complex mixture of emotions that defy easy description.

Class Day at HMS is no exception; if anything, the circumstances of life at this medical school accentuate the bittersweet experience of graduation. By now, the members of the class of '81 have disbanded to internships and residencies throughout the country; it will be awhile, no doubt, before some friendships are





rekindled. And because these hospital commitments follow closely on the heels of graduation, there is barely time to savor the joys of accomplishment before moving on to the next challenge. Even on this, the happiest of days, there are poignant reminders that nothing is gained without some loss.

In recognizing those who did most to enhance their experience at HMS, this year's graduates chose to combine the joy they derived from those special individuals with their sorrow at the death of a young professor. A plaque which now hangs in the Waterhouse Room honors "the memory of Dr. Valentina Donahue Turner for her dedication to teaching and her inspiration to the students around her." The eleven members of the HMS faculty and administration cited on the plaque "for their contributions to our medical education and their concern for our individual development" are: William D. Cochran, Daniel D. Federman, Edwin J. Furshpan, Daniel A. Goodenough, Leston L. Havens, A. Noreen Koller, Frederick H. Lovejoy, Robert A. Novelline, Alan L. Schiller, Elio Raviola, and Arnold L. Weinberg.

Sue Foehrenbach Bunker, administrative assistant in the Student Affairs Office, and Rita Jordan, who is retiring after ten years as a reading specialist in the Recruitment and Retention Program, were



also recognized for their roles in helping to expedite the business of being a medical student. And, in somewhat of a reversal, Patricia Cole, mistress of ceremonies for Class Day, was presented with a dozen red roses by the administration for her unflagging work on the behalf of the class of '81.

Thirty-one students received their degrees cum laude or magna cum laude in a special field, and twelve prizes and awards were given in specific areas of achievement, academic or otherwise. Recipients were:

SCOTT T. AARONSON, cum laude and Dr. Sirgay Sanger Award for excellence and accomplishment in research, clinical investigation, or scholarship in psychiatry: "Nightwatch—A Time-lapse Video Study of Movement During the Sleep-Wake Cycle."

CLAUDIA M. ALLEYNE, WALTER K. CLAIR, AND DEBORAH G. MORRIS: Kaiser/National Medical Fellowship Merit Award for outstanding academic achievement by a graduating minority medical student.

JONATHAN BRAUN, cum laude: "Ligand-induced Association of Surface Immunoglobulin with the Detergent-Insoluble Cytoskeletal Matrix of the B Lymphocyte."

CLARLES R. BRIDGES, cum laude: "The Functional Characteristics of the Human Glomerulus in Health and in Minimal Change Nephropathy."

JAMES D. BRISTOW, magna cum laude: "Fetal Hepatic Metabolism and the Distribution of Energy Substrates in the Ovine Fetus."

DAVID J. BRYAN, cum laude: "Direct Estimation of the Frequency of Human Cytotoxic T Lymphocytes and Their Precursors Following *in vitro* Allosensitization."

CATHY A. BURNWEIT, magna cum laude and Henry A. Christian Award for notable scholarship in studies or research: "Thionein mRNA Induction in Organs of Mice Exposed to Oral Cadmium and Zinc."

NICHOLAS A. CATALDO, cum laude: "Cultured Bovine Anterior Pituitary Cells: I. Thyroid Hormones Stimulate and Cortisol Inhibits Pro-

lactin Secretion."

YU-LAM C. CHIU, cum laude: "Mechanical Properties of Cat Papillary Muscle."

MARK A. GOLDBERG, cum laude: "The Effect of Erythrocyte Membrane Preparations on the Polymerization of Sick Hemoglobin."

LEONARD C. GROOPMAN, Richard C. Cabot Prize for the best paper on medical education or medical history: "Doctor's Dilemmas—The French Medical Profession, 1803-1845."

PETER F. HAHN, cum laude: "Procoagulant from the Guinea Pig Line 10 Carcinoma: A Mediator of Trousseau's Syndrome?"

H. WILLIAM HARRIS, JR., James Tolbert Shipley Prize for research, the results of which have been published or accepted for publication: "Structural Characterization of the Phosphorylation Sites of Human Erythrocyte Spectrin." *J Biol Chem.* 1980; 255:11512-11520. "Comparison of the Phosphorylation of Human Erythrocyte Spectrin in the Intact Red Cell and in Various Cell-free Systems." *J Biol Chem.* 1980; 255:11521-11525.

HOWARD C. HERRMANN, cum laude: "Studies on the Regulation of Angiotensinogen Production."

JOSHUA S. JAFFE, cum laude: "The Effect of Early Exercise on Myocardial Infarct Size Following Coronary Artery Occlusion in the Rat."

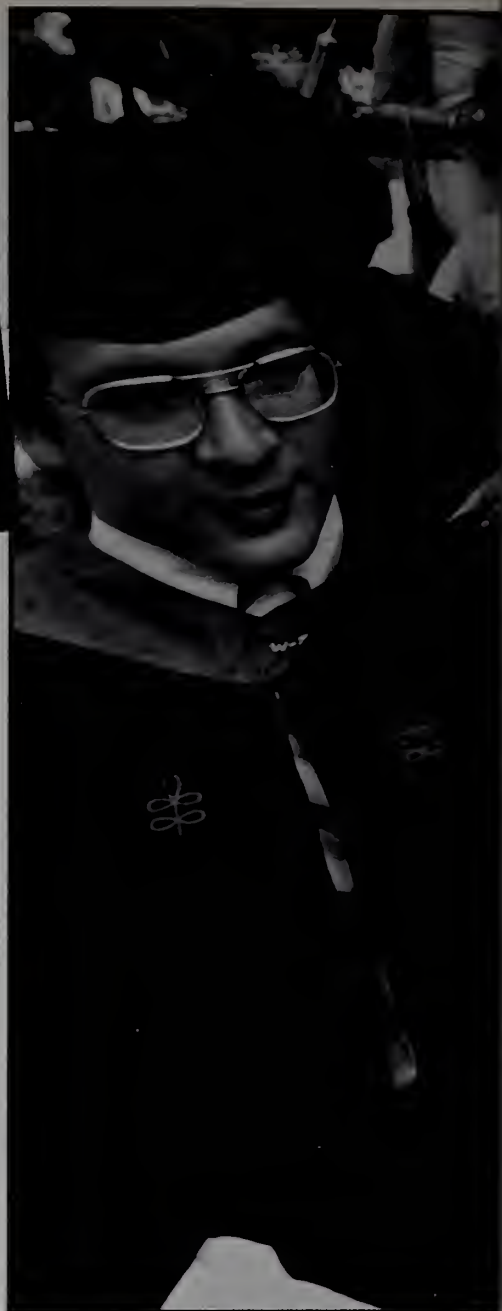
MITCHEL A. KLING, cum laude: "The Effects of Long-term Lithium Administration on Renal Morphology and Function in Rats."

JANET E. KUHLMAN, Rose Seegal Prize for the best paper on the relation of the medical profession to the community: "Alternatives to Institutional Care for the Elderly."

ALEXANDER LING, JR., magna cum laude: "Volume Determination of Lesions in Cranial Computed Tomographic Images Using Boundary Detection."

JAMES C. LISAK, cum laude: "Calcium Action Potentials in Mammalian Cortical Neurons in Cell Culture."

JOSEPH R. MADSEN, magna cum laude: "Effects of Prenatal Treatment of Rats with Haloperidol: Possible Consequences of Re-



tained Drug."

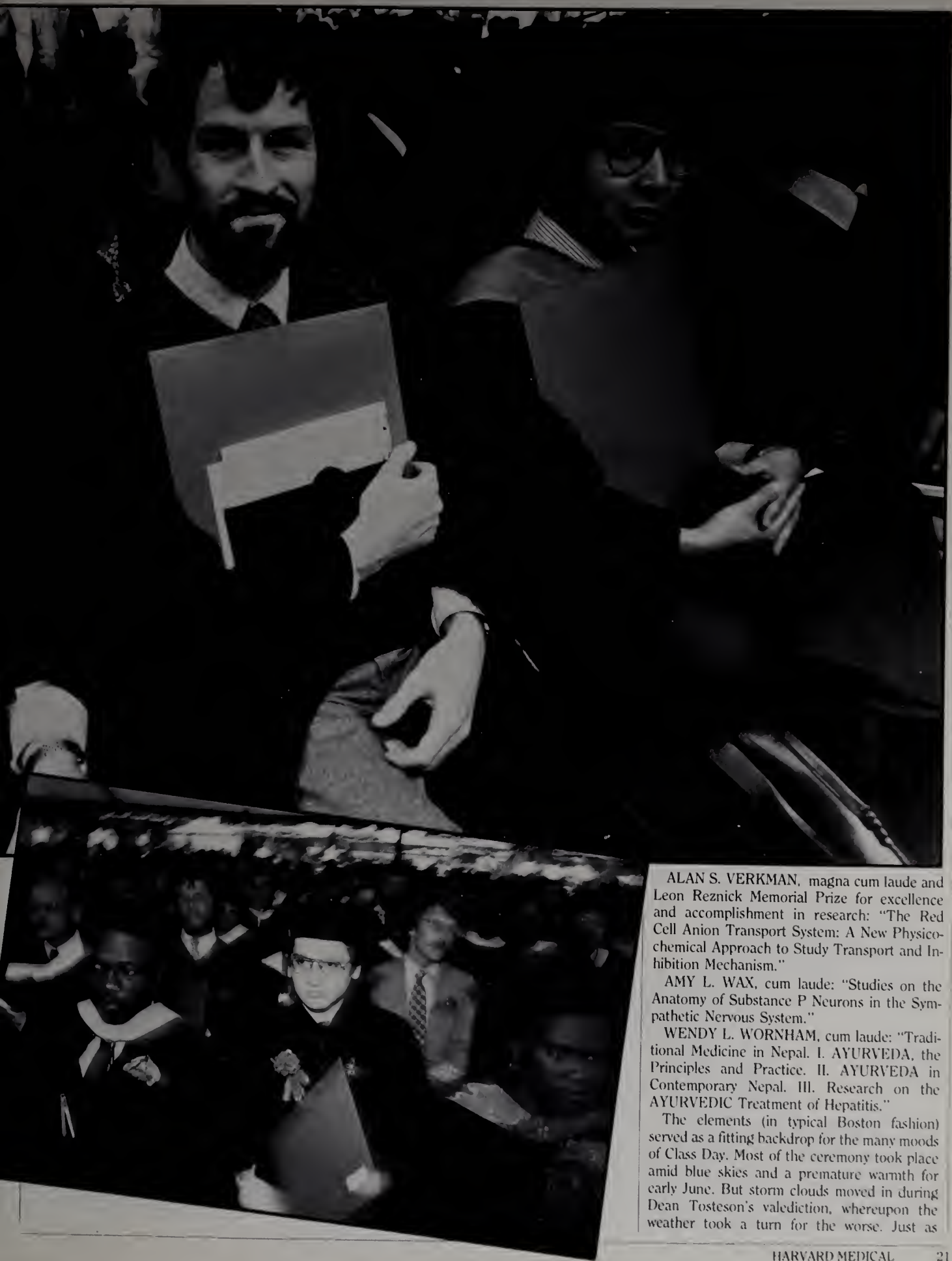
WILLIAM J. MAZZEI, cum laude: "Correlation of Maximum Expiratory Flow and Airway Area."

MARK B. MENGEL and KAREN R. ROSENKRANTZ: Louise B. Carr Prize for excellence in contributing to the betterment of medical school life.

STEPHEN O. PASTAN, cum laude: "Quantitative Analysis of the Use of the Sputum Culture and Sputum Gram Stain in the Diagnosis of Community-Acquired Pneumococcal Pneumonia."

ROBERT I. TEPPER, Soma Weiss Award for the best paper presented at the Undergraduate Assembly in 1979: "Chromosomal Mapping and Modulation of a Human Plasminogen Activator Locus."

BRUCE R. TROEN, cum laude: "The Role of the Thyroid in the Effect of Aging and Sex Upon Lymphoid Tissue in the Rat."



ALAN S. VERKMAN, magna cum laude and Leon Reznick Memorial Prize for excellence and accomplishment in research: "The Red Cell Anion Transport System: A New Physicochemical Approach to Study Transport and Inhibition Mechanism."

AMY L. WAX, cum laude: "Studies on the Anatomy of Substance P Neurons in the Sympathetic Nervous System."

WENDY L. WORNHAM, cum laude: "Traditional Medicine in Nepal. I. AYURVEDA, the Principles and Practice. II. AYURVEDA in Contemporary Nepal. III. Research on the AYURVEDIC Treatment of Hepatitis."

The elements (in typical Boston fashion) served as a fitting backdrop for the many moods of Class Day. Most of the ceremony took place amid blue skies and a premature warmth for early June. But storm clouds moved in during Dean Tosteson's valediction, whereupon the weather took a turn for the worse. Just as



abruptly, the rain ceased; and when the program drew to a close, the class of '81 dispersed under sunny skies.

THE PRIMARY CARE OF MEDICAL STUDENTS

by Walter Kevin Clair

DURING THE LAST DECADE, our vocabulary has been expanded to include the phrase 'primary care'. Generally, this refers to the practice of health care that includes all aspects of one's mental and physical well-being. Tampering with the term just a bit, and using my own experiences and those of some of my classmates as a basis, I'd like to express some of my observations on the primary care of students at Harvard Medical School. In doing so, I refer to our emotional and educational well-being.

One might argue that, as students about to graduate from medical school, we have been fairly successful. When obstacles have been placed before us—and there have been many—we've been able to hurdle them. Many of us are eager to acknowledge those who offered support during periods of frustration and anxiety: our families, friends, and classmates who've shared in our emotional and educational growth. But what of the primary care we purchased with our tuition dollars? Who were the providers and how well have they served us?

During the first two years of medical school, the preclinical years, these providers were all around us. In Building A there resided a number of deans, some of whose responsibilities included interacting with students. They were only a few, and they usually interfaced with students through the offices of admission, the registrar, student affairs, and financial aid. In these offices the triage of student problems was handled by staff and secretaries who, more often than not, became the actual providers of care—and we thank them.

In Building E was the Office of Teaching Resources. Without its audio-visual and photocopy services, the various study habits and sleeping patterns of medical students might not have been so comfortably accommodated. Building E also contained the anatomy labs. Praise to the department of anatomy! It seemed to be one of the few preclinical departments that was more concerned with student learning than with impressing upon us our relative ignorance. Most of the other preclinical departments consisted of specialists who certainly did not feel that they should concern themselves with nonacademic aspects of student life; some, it seemed, were hesitant to share responsibility for any aspect of our education.

In fairness, most of the primary-care providers of our first two years served us reasonably well. But at the end of our second year, we lost these providers. We entered the teaching hospitals and clinics where the risk factors of social isolation, sleep deprivation, hostile attending rounds, and our first close interactions with patients threatened our well-being.

Sure, the course heads and department chiefs met us with reassuring smiles and pats on our backs. They told us of the wonderful times we would have. But after a brief, friendly orientation, we learned that there was regularly open hostility toward students. We were described, variously, as too lazy, too compulsive, clinically inexperienced, arrogant, shy, slow, and occasionally dangerous to patients. When an individual student was found adequate, that student was considered an exception. If we asked for more structured teaching, we were either sent to the library to prepare presentations of rare diseases or reminded that our clinical instructors received none of our tuition dollars.

dogma; rather, they urged us to experiment and to question established truths. They reassured us that to love medicine did not mean that we would have to forfeit jazz and ice hockey. Most important, they cautioned us that, as we pursue our careers, it would be very unfortunate were we to lose our empathy for students.

The next year will offer us many avenues for further personal and professional growth. We will have continual contact with students and the responsibility of teaching. For some of us, this will be a task for which we will have had little or no preparation while at Harvard. But, if we can learn from our own experiences, it will be an exciting and challenging opportunity to contribute to the primary care of medical students.

TO DEFEND LIFE

by Peter Alan Selwyn

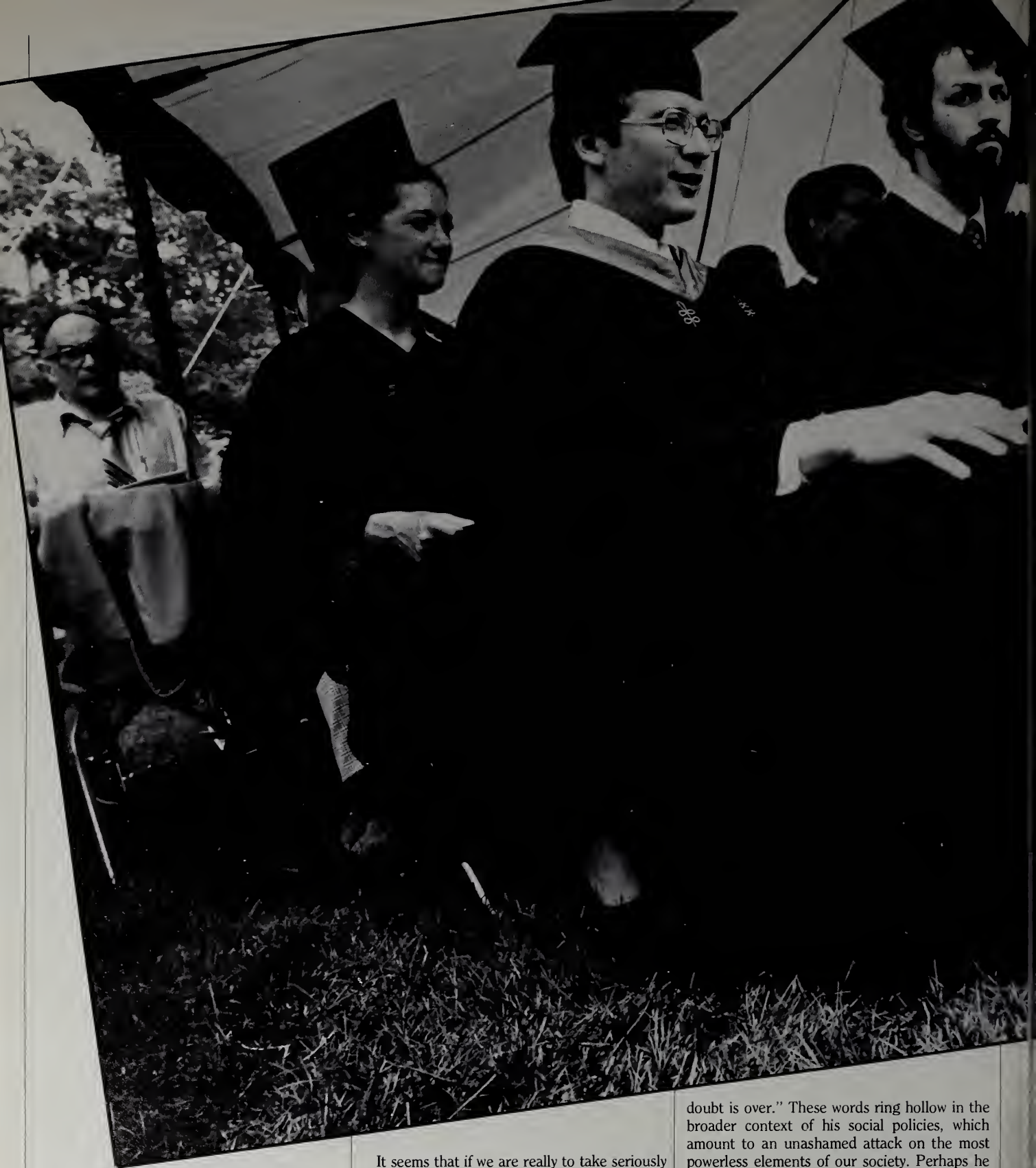


This is not to imply that we were all downtrodden. Some of my classmates adjusted more rapidly than others. In fact, several will claim that they had no difficulty whatsoever. They were blessed with greater strength of character, easier acceptance of authority, or, perhaps, longer ancestry in medicine.

Fortunately, our presence here today is evidence that the remainder of us somehow survived and even excelled. For this, we owe much to a special group of people who emerged out of the maze of competing interests in the hospital environment. Some were attendings and nurses; others were interns and residents. They had in common a genuine and sincere concern for students. They cared about our lives as well as our education. They were interested in both what we learned and how we learned. They did not scorn us for being students, but reminded us that they too had once been students. They did not forcefeed us their particular medical

RELECTING ON THE EXPERIENCES I've had working in different hospitals over the past two years, I'm struck by the sincere commitment to life that is everywhere in evidence. Physicians and other health workers willingly work long hours, often at some personal sacrifice, in the service of sick patients. Exquisitely designed machines monitor life functions with great sophistication. But this commitment to life is, I think, sometimes too narrowly conceived; it exists apart from the realities of people's lives as they are lived in society-at-large. By focusing on the biological at the expense of the social, we ignore what it is that makes life truly human.

ICU monitors beep on with cool precision, as patients and their families suffer through fear and isolation; life is being preserved, without question, but the human substance of that life



rarely seems to impact on the technical decisions made which affect it. Even more troublesome: how to square the existence of those same ICU monitors with tenement housing a few blocks away? With a surrounding community suffering from unemployment and violence? With a world threatened by nuclear war?

It seems that if we are really to take seriously the tasks of physicians, of healers, then we must try to defend life on all levels: not just in the ICU, but in the family, in the community, in all areas where the full expression of humanity is stunted by injustice, intolerance, and poverty.

In a recent speech at West Point, President Reagan spoke of a "spiritual revival" in this country, and proclaimed that "the era of self-

doubt is over." These words ring hollow in the broader context of his social policies, which amount to an unashamed attack on the most powerless elements of our society. Perhaps he was thinking of our decaying inner cities as zones of spiritual revival at a time when these areas stand to lose already inadequate government funds. Perhaps he was anticipating a new era of self-confidence for the elderly facing Medicaid cuts, or for the children whose school lunch programs have been eliminated.

What does all this have to do with becoming a



doctor? On a very profound level, I think, we are seeing that we live in a society where the meaning of life itself is being cheapened, where the dictates of profit-making, along with a dangerous warlike mentality, take precedence over the needs of people. What does it mean to become a doctor in a time such as this?

The marketing of baby formulas in the Third World has been clearly linked to widespread infant malnutrition and disease, yet the United States recently stood alone among 118 other countries in voting against a U.N. proposal to restrict this trade, on the grounds that it would interfere with freedom of commerce. What does it mean to become a pediatrician in a society such as this? In a time when hundreds of mil-

lions of dollars are being sent to prop up corrupt and unpopular governments in Central America; when in this country funds for prenatal care, child nutrition, and other public health programs are being drastically cut back; when black children continue to be murdered in Atlanta?

What does it mean to be interested in preventive medicine in a time when conservative estimates implicate environmental and occupational hazards in eighty percent of currently occurring cancers? When recent Cabinet appointments portend a blatant lack of concern for the health and environmental consequences of industrial expansion?

What does it mean to care for the elderly in a time when Medicaid and Social Security benefits are being threatened, while those on meager

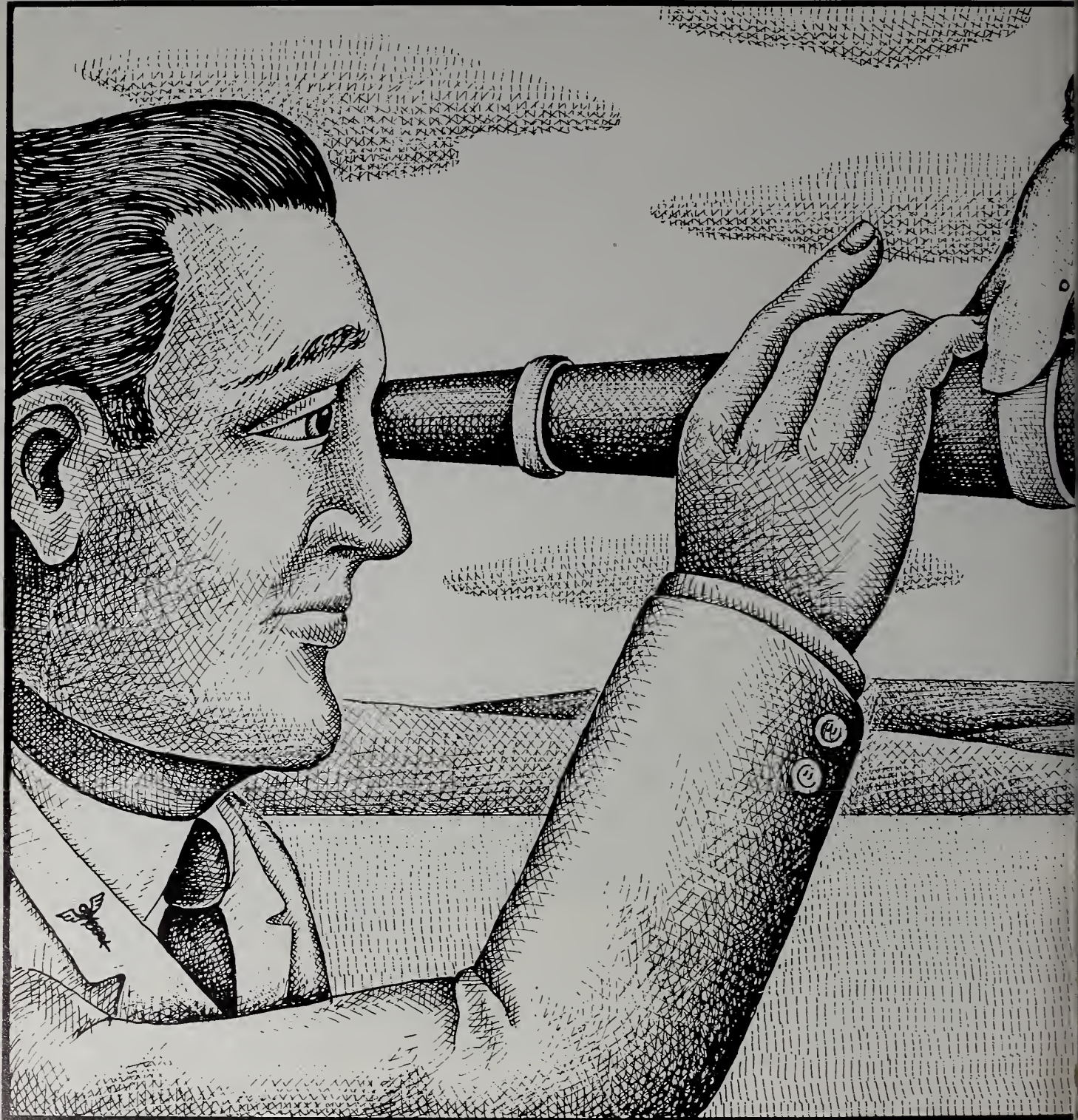
fixed incomes face a bleak choice between eating or paying their skyrocketing fuel bills?

Finally, what does it mean to be any kind of doctor, a defender of life, in a time when the threat of nuclear catastrophe is perhaps greater than it has ever been before? When current world stockpiles of nuclear arms have a collective destructive force one million times that of the bomb exploded on Hiroshima? It has been amply shown that a single 20-megaton bomb dropped on Boston would be so devastating as to render all these impressive medical buildings instantly useless. Every structure within a four-mile radius of the blast would crumble immediately; ninety percent of all physicians would be dead or injured, along with nearly a million other people in the surrounding area; and the few survivors would be faced with gruesome epidemics of radiation-induced disease, against which any remaining medical supplies would be virtually helpless.

This is admittedly not a very cheery topic to bring up on such a happy occasion; but it seems perhaps even more inappropriate *not* to speak of this today, when the stakes are so high. How do we go on each day, how do we take up our daily work in the face of such horrors? The temptation, of course, is not to think about them, or to pretend that these matters somehow don't exist once we enter the hospital. Indeed, this type of denial seems almost necessary at times, as a means of fending off what otherwise would be a paralyzing anxiety. Yet we must reject this denial, so that we may ultimately become more effective as physicians.

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GENERALISTS-A SEARCH FOR THE PERFECT 7



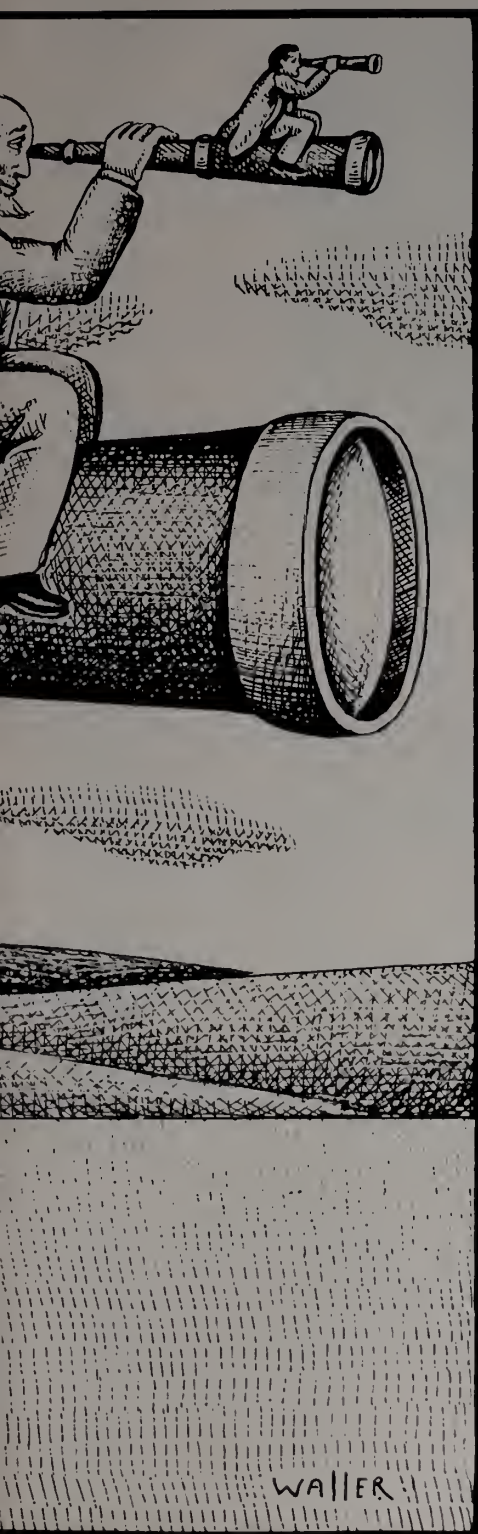


ILLUSTRATION BY CHARLES WALLER

WHEN PERRY

my mission, should I agree to accept it, would be to deliver a message with humor supported by interesting experiences and (most difficult) accomplishments. The accomplishments—mostly against the grain—seem especially fragile in this era of supply-side economics. The experiences are simply the stuff of life. The humor—well, let's face it—I have fifteen minutes and a hungry audience!

I'm left with the responsibility for a message; there will be two. The first is a reflection on what is crucial to the excellence of medical education. For this part of the message, I owe very much to Harvard Medical School. The second will comment on what I understand to be the work of the generalist in medicine, and the intellectual challenges of preparing for that work. For this part of my message Harvard need accept as much blame or credit as seems fitting. Lest I distress the occasional generalist among you, or inadvertently reassure the rest, the "Perfect 7" of my title does *not* refer to the lowest passing grade on a scale of 10. I will reveal its significance in due course.

It is remarkable to look back from the perspective of twenty-five years—an entire generation—on the content of our education. How primitive it now seems! We weren't fully into the biomedical era, but we did learn to become modern doctors and we *have* contributed our share to the advances of clinical care and biomedical science over the last twenty-five years. What, then, *was* most important to that outcome? Today I hear practitioners, teachers, and even students argue that excellence of medical education depends mostly on "content" and "objectives." I would like to speak on behalf of expectations, relationships, and style.

I do not remember much of the content of our lectures—except Dr. Wesselhoft demonstrating the coughs of Morbilli and Pertussis. I certainly remember little of the examinations which certified us. I do remember Dr. Blumgart and his obvious humanity which seemed so worth emulating. I do remember our first patient and clinical teacher, and many that followed. Norm Sterns had something very exciting for us—a young woman recovering from a serious infection. Our euphoria was dampened a bit when all four of our group failed to

Culver asked me to speak to my fellow alumni, he said that

perceive that breath sounds were entirely absent in the left chest—the result of a massive pleural effusion with streptococcal pneumonia.

We learned two important lessons from that experience. First, good technique and knowledge did have to be mastered; one can "listen" and still not "hear."



The biomedical revolution of the last two decades "nourished us all"; but general medicine may offer a more balanced diet for the eighties.

Secondly (and for me, at least, even more important), we realized that our teacher assumed that we would take responsibility for learning to avoid such mistakes; that we could count on respect, and encouragement and confidence that we would be successful. Many mentors confirmed that first impression: Joe Foley, Charlie Davidson, Max Finland, Bill Castle, to mention only a few.

Standing here looking down the avenue, I think especially of Dr. Castle. He was my used

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BY MARC E. HANSEN



EVEN IN
the teaching hospital,
disease can be com-
monplace and dull, but
each example comes
equipped with a unique
individual and poses a
fresh opportunity to
learn to integrate
knowledge and skill in
patient care.

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car dealer. One day I discovered a small note on the bulletin board in Vanderbilt Hall: *For Sale: 1934 Ford V-8 \$50. W. Castle.* Dr. Castle was famous for his ancient cars, and one wondered why he would sell this one! I somewhat timidly called him and said that I'd like to come look at the car. He said, "I know how busy you medical students are," and rather than my going to him at the City, he'd stop by Vanderbilt Hall.

Word got around, and there were more than a few faces looking out on the Circle of Tugo as Dr. Castle drove up the street. There were no parking spaces, and he became the first person *not* to double park, rolling up the street with me in pursuit. I caught up, circled the car, peered under the hood at the motor, and conducted the decisive test by giving each tire a swift kick! After a brief ride in which I learned of the superior reliability of mechanical brakes, we returned and—believe it or not—I told him that "I'd have to think it over." I hastened to call him back, but only after forming a partnership with my classmate Chase Peterson, who was able to raise the other \$25.

Marc Hansen '56 is professor of family medicine and pediatrics at the University of Wisconsin.

To put this story in perspective, and to prove that even the saints among us are not perfect, Dr. Castle confessed some considerable while later his real reason for selling—a fact that Chase and I (and our future spouses) had by that time discovered. In spite of perfect mechanical condition and graceful, if angular, proportions, the car had one significant flaw: When it rained, water poured onto the driver's lap! Even at Harvard, let the buyer beware.

Looking back, I realize how valuable and important were the relationships with our teachers and their confidence that we wanted to learn and would learn. I hope that some of the characteristics of the relationship between students and teachers in 1956 have persisted; medicine has changed, information has exploded, and it has probably become much more difficult. We seem to worry more about "standards" (usually very poorly defined) and certification than about encouraging and supporting the people who are busy learning.

It is a mark of great progress that medical schools have opened their doors to valuable and remarkable students who were severely under-represented in 1956—women, minorities, those educationally or otherwise disadvantaged. I hope that the confidence and support that we enjoyed have been extended to them. But changes in style and expectation have occurred and have affected all students, not always for the better; and it may be time to look critically once again at the realities of the student experience. The kinds of doctors our schools produce will depend on it.

My second message relates to the work of generalists, and to education for family practice. As a student, I wanted to be a general practitioner—a family doctor—though the name didn't exist in 1956. The reason for my deviant choice was that I found patients, and the interaction of their lives with illness, to be more compelling, complex, and challenging than disease itself. Even in the teaching hospital, disease can be commonplace and dull (to the doctor, if not the patient), but each example comes equipped with a unique individual and poses a fresh opportunity to learn to integrate knowledge and skill in patient care. In 1956, education for family practice was a do-it-yourself project. Those of us who aspired to be L.M.D.s had to resist the prevailing conclusion that the generalist was an anachronism at best and a self-deluding charlatan at worst. In 1981, a reliable educational path to family practice *does* exist, but has bias against it really changed in most medical schools? Has it changed at Harvard?

My two messages are linked by one clear but easily ignored fact: Medical students are generalists by definition. Not only do they need to know something about everything, they need to know *enough* about everything and somehow maintain that knowledge—at least for awhile. Only after succeeding as generalists do students move on to graduate training and specialization, but students often choose their specialty never having used the opportunity to integrate their knowledge and skills in ongoing personalized patient care. If students are *de facto*

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SELDOM COME BY



A SEASONED SURGEON RECALLS HIS DAYS AS A NOVICE IN NEWFOUNDLAND AND REFLECTS ON THE ESSENCE OF PATIENT CARE

Doctors are, above all else, doers. And influencers. We spend our lives altering disease processes, advising the unwell, prescribing medicines, making incisions. My talk—which is named for a town a long way down east—is concerned less with doing than with making do, and less with the doctor changing the patient than with the patient affecting the doctor. Let me illustrate with three sets of stories: close encounters of the bedside kind.

The time: four o'clock in the morning, mid-summer between our third and fourth years at HMS. The place: Twillingate, an island off the northeast coast of Newfoundland. Icebergs shone white in the bay and I was shivering partly from the chill and partly at the prospect of my first home delivery. The bag full of sterile goods looked pathetically spare and, as I walked up the dusty path leading to the fisherman's cot-

tage, I hoped against hope that the baby would get there before I did.

Minutes later, however, the child was born in an upstairs room illuminated by a faltering flashlight. My sense of relief was boundless, but short-lived; for when I reached for the placenta, I was startled to grasp a foot instead. For one anxious moment in the dimly lit room, I thought it belonged to the child I had just delivered; but a quick check of the infant on the bed revealed that all its extremities were intact. "Do I have to go through all this again?" wailed Mrs. Pardy, the mother. "Do I have to go through all this again?" I echoed. How disgraceful now my inattention to details of footling breech deliveries during that third-year lecture on difficult presentations.

After the second child arrived, the mother asked me if I didn't have "grease" for the babies. I was then unaware of the Newfoundland practice of oiling the skins of newborns, and misinterpreted the word "grease" as a re-

A 1951 graduate of HMS, Clement Hiebert practices thoracic and cardiovascular surgery in Portland, Maine.

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BY CLEMENT A. HIEBERT



WITHIN EACH of us there is a longing to be focused, to be fulfilled, to be fully used. How, then, did we wind up as 'providers' while our patients became 'consumers'.

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quest to say *grace* for the twins! Still recovering from that one, I tucked a baby under each arm and retreated down narrow stairs to the kitchen where children and appreciative relatives stood waiting. All but the father. He was outside operating on a pile of codfish. Elatedly, I called over, "You have two!" "These your first?" he asked, barely looking up.

I learned three things from this experience: (1) a measure of self reliance; (2) that it is possible to get by on less, and (3) that the reason for having water boiling during a home delivery is so everybody can sit about afterwards with a cup of hot tea.

Such, then, was the stuff of an intensely memorable summer in an unspoiled land peopled by the sturdy followers of John and Sebastian Cabot. The struggle for survival and the loneliness of life in communities bound together only by the sea in summer and dogsled in winter is reflected in the names they gave to their settlements: Chance Cove, Dead Man's Bay, Hell's Mouth, Joe Batt's Arm, and Seldom Come By.

I was in Twillingate with classmates Jerry Foster and Arnie Nevis, each of us savoring the first heady taste of being real doctors. Our hero and near-deity to the people of Notre Dame Bay was John Olds, who himself first came to Newfoundland as a Johns Hopkins medical student. Following graduation, he returned to Twill-

wonderful hake in me 'ead." We saw rickets, scurvy, beri-beri, and much infectious disease, especially tuberculosis. We were ambulance drivers, dentists, family doctors, pharmacists, X-ray technicians, anesthetists, and public health officers. Jerry Foster—now a renowned internist—was a very nifty surgeon then. We did appendectomies, cesarean sections, and extracted countless teeth. (Fourth year at Harvard Medical School was pretty dull after that!)

USUALLY, BEFORE EM-BARKING ON AN OPERATION, DR. OLDS INSISTED THAT WE AFFIRM OUR

preoperative diagnosis by dropping a quarter in what he solemnly called the "Education Fund." Only if we were proven correct was the quarter refunded. The box filled quickly. One day I asked Dr. Olds how the fund would be used. He answered immediately: "That's for your education, son, so you'll never make that damn fool diagnosis again!"

A year ago I returned to Twillingate. One of my twins had died at six months, but the other heard I was on the island and searched me out. He is a handsome fisherman. His parents had named him after me, not "Clement" but "Hiebert"—in a land where "H's" are not pronounced! The island has changed, thanks to a

tures and returned to Portland for operations. The trouble was, we had no projection equipment for the 35mm cines—until the manager of a local Portland theater for "adult" films came to the rescue and allowed us to splice in our angiograms between *Nymphs at Play* and *Behind Bedroom Doors*. This worked very well for all. Patients got fixed. Theater patrons got an unexpected if somewhat baffling treat. And attendance at our cardiac conference was one hundred percent!

Before we started doing advanced coronary surgery, the major challenge involved prosthetic valve and pacemaker implementation. We paid for the pacemakers out-of-pocket. On a number of occasions, we had to borrow or to gas-sterilize the implanted hardware; and this was made possible by Jerry Austen, at the MGH. Back in Portland, my nurse, Marilyn Van Saun, would wait before placing the patient on call for the operating room until she heard the Northeast Airline's plane overhead.

Each of these operations was new and exciting. An eighty-year-old clamdigger from Scarborough was cautioned by the resident not to talk during the pacemaker implantation. His response was, "That's odd—when I'm out clamming, I just love to have people talk to me!" One lady from Rumford rambled on telling anecdotes about Maine through the entire pro-

I LEARNED that the reason for having water boiling during a home delivery is so everybody can sit about afterwards with a cup of hot tea.

ingate where he founded a 150-bed hospital; trained nurses, pharmacists, and technicians; made surgical instruments; and established a contract arrangement with the people of Notre Dame Bay for full hospital and home care costing less than \$10 per family per year. All of this took place fifty years before the idea of health maintenance organizations surfaced in the United States.

Notre Dame Memorial Hospital serviced approximately 25,000 people scattered over four-hundred miles of coastline. The *Bonnie Nell*, a 60-foot, floating out-patient department, was equipped with X-ray machine, cook, skipper, nurse, and doctor, and plied the coast to care for the accumulated ailments of people far removed from the daily functional radius of the hospital. As for Jerry, Arnie, and myself, we generally made our house calls by open fishing boat, dodging icebergs on the way. Standing in the bow clutching the Merck Manual, salt spray stinging our cheeks and hands, we would shout our questions to the helmsman, who more often than not was the patient's next of kin. In this way we hoped to anticipate both the diagnosis and remedy and be spared the embarrassment of surreptitious bedside research later.

One learned not to ask, "What is the matter?" It would surely bring the rejoinder, "That is for ye to find out." Instead it was, "What do you find?" "Oh, Doctor, I've a

causeway which now connects it to the mainland. A Radio Shack and a jeans shop stand where codfish once dried on the flakes. The last hand-set press on the North American continent prints no more.

John Olds, although semi-retired, is still at work, cussedly original and independent as ever. The dusty hospital lane has been paved and the old hospital replaced and taken over by the Canadian government. (Although the new hospital spends \$2,000,000 annually, fewer patients are cared for now than in 1950 when Dr. Olds was the sole practitioner with a total budget of \$50,000.) The chief surgeon is a woman. "Did you train her?" I asked. "No, but I delivered her," was the answer. A recent tribute in the *Newfoundland Press* on the occasion of Dr. Olds's seventy-fifth birthday recalled an encounter with the physician, who was riding horseback over the frozen Twillingate bight: "It was snowing at the time; he was holding a compass in one hand and the reins in the other. He was traveling over the ice to visit a patient on New World Island."

The setting of my next story is Portland, Maine. When our group first began doing coronary surgery, we possessed the operative skills but lacked critical angiographic and projection equipment. The opposite situation existed, it seemed, at the Hitchcock clinic in Hanover. Thus, patients went to New Hampshire for pic-

cedure. At the end, when I assured her that the pacemaker was working fine, she offered, "Well, even if it isn't, we had a nice time, didn't we!"

My third story dates back to 1964, when I set off for two months' duty as deputy medical director of Project HOPE in the Republic of Guinea, West Africa. (In so doing I followed the earlier example of Walter Haynes, Jack Tetirick, Gordon Scannell, and others.) At home, there were three responses to this decision: A friend of my mother's in Lewiston was puzzled. "I thought Clement had a good practice in Portland," she pointed out. My late brother, Joelle, an ardent fly fisherman and surgeon asked, "Which way is Guinea from Mooshead Lake?" As for my wife, my plan was greeted enthusiastically—too enthusiastically. I thought later. Performing operations on the HOPE Ship was almost like being home; but operating on shore was a continual challenge, with lights that failed, an unpredictable water supply, and the constant spectre of disease looming above a surgeon's capacity to heal.

Two months after my return from Guinea, I was disembarking from a Boston-to-Portland flight, and by sheer chance glanced around to discover that a former patient from Africa had been on the same plane. Traore Kabine, a nine-

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XIAN TO ZZYX, L.A. IS THE PLACE!

Xian is the city in China where I was born. Zzyx is a road sign thousands of Americans have seen on their way to search for fortunes. Los Angeles is where my family and I have made our home.

Xian (Sian) was the capital of China some 2000 years ago. When the First Emperor of Qin (Chin) defeated six other kingdoms and unified China in 221 B.C., he built what was then the earth's biggest city, with a population of one million. The Chin Dynasty lasted only fifteen years, but some of the legends formed in that short span of time have recently come alive. In 1974, it was discovered that the tomb of the Emperor Chin contained an army of more than seven thousand life-sized terra cotta soldiers and horses. Eight of the warriors and horses, along with a hundred other objects of archeological interest, are now part of the "Exhibit of the Great Bronze Age of China" that is touring five cities in the United States. Emperor Chin died twenty centuries ago, dejected because he could not find the elixir of life. But his art lives on, spreading culture and friendship all over the world. (A note to classmates on the east coast: this may be the first time a major art exhibit has stopped in Los Angeles *before* coming to Boston.)

When the Communists took over in China, I was twelve years old. Our family moved to Taiwan, where we lived for seven years. I came to America in 1955, after my first two years in college. Thus, I have lived in this country longer than I had in China. In the beginning, people often asked me: "How do you like America? Are you disappointed?" But I think I have always had a pretty realistic view. Before I got on the airplane, a wise aunt told me: "Do not fear the new world! It is but another society." The word 'society' put me at ease because I knew there were all kinds of people in a society—some good, some bad. I have been lucky to know many honest and friendly people.

There were some humorous problems of adjustment. When I was attending the University of South Dakota, one Monday morning I found I was the only student walking to class. It turned out that the football team had finally beaten its state rival, and so the president of the school had declared a holiday. My husband, who came to study in this country at the University of Notre Dame, got 100s on all of his mathematics tests—helped in part by the fact that he didn't realize he was only supposed to do some of the

...AND HOW CANTON, OHIO GOT ITS NAME

problems assigned as homework. He always did all of them!

In college I majored in bacteriology. The chairman of the department tried to recruit me to be a graduate student. I was interested in medicine *and* research, but he told me there was no medical school that taught both—except Harvard. That was the first time I had heard the name.

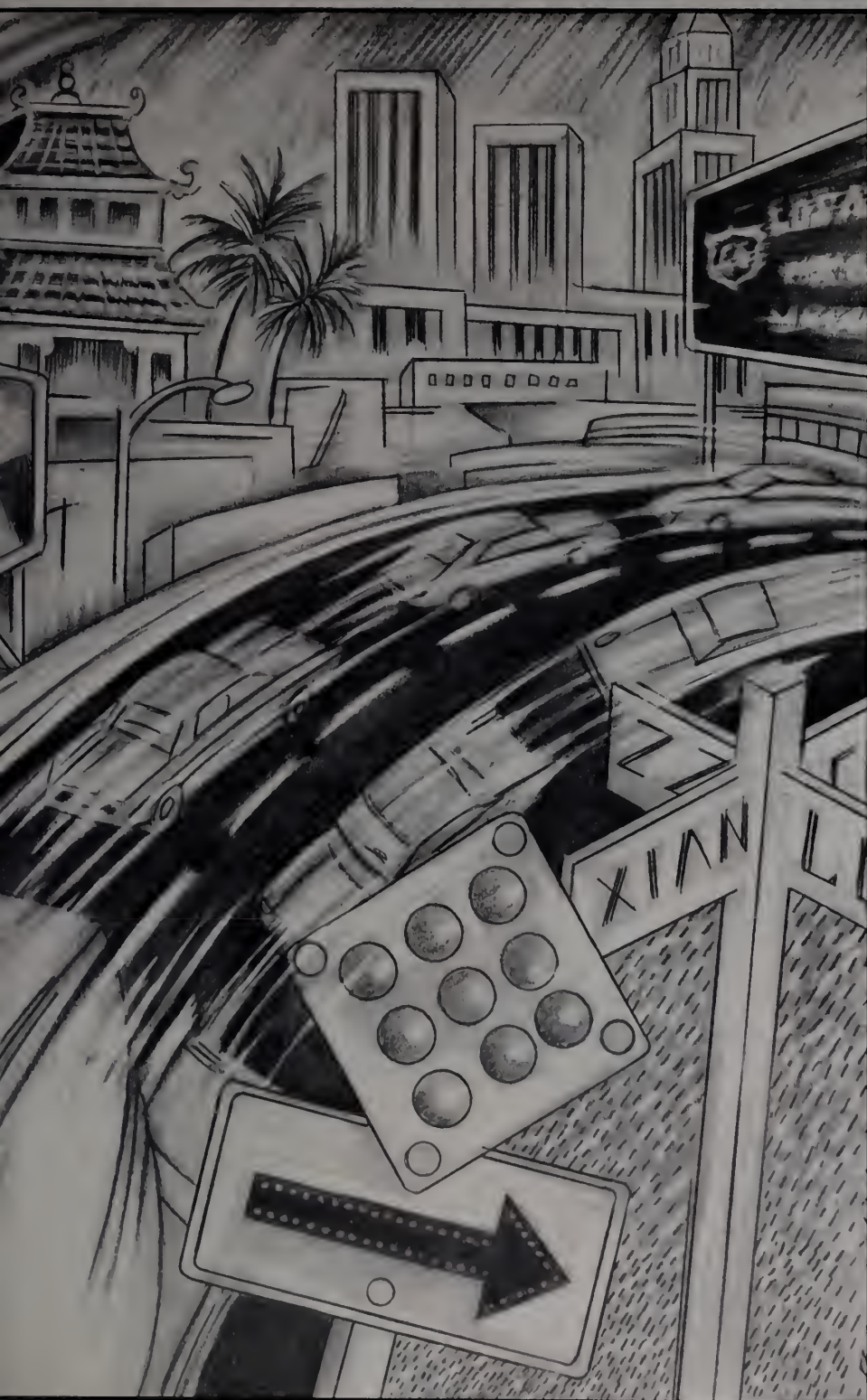
I decided to go into surgery after I took an elective in pediatric surgery at the Boston Children's Hospital and subsequently became one of the first straight surgical interns at the University of Michigan. It was there that I met my husband (even though our birthplaces in China are only 60 miles apart). After he got his Ph.D. and found a job in Missouri, I moved with him. There was no children's hospital in Columbia, Missouri, but there was a good cancer hospital; thus, I elected to specialize in surgical oncology. My husband liked Missouri very much, because the Missouri River is as muddy as the Yellow River, which runs near his former home in China.

In December, 1978 I traveled with my husband and son to China. The day after we arrived, the normalization of Sino-American relations was announced. Overnight, the American imperialist-capitalists turned into friends and allies! We were given special permission

BY YEU-TSU N. LEE



ILLUSTRATION BY ANTHONY RUSSO



A book of Chinese prophecies written in 618 A.D. correctly predicted the Boxers' War, the birth of the republic, the revolution of the communists, the Second World War, the coming of airplanes, submarines, and atomic bomb.

to visit my husband's family home in a distant village. For him, the reunion was a mixed blessing. He was happy to see his mother again after thirty-five years, but he was angry to learn that his home and properties had been confiscated and that the members of his family were still considered second-class landowners. And his mother, at eighty-two years old, still had to work for the commune, collecting firewood.

I had the opportunity to visit several hospitals and talk to many doctors. Chinese physicians

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Yeu-Tsu Lee '61 is an associate professor in the department of surgery at the Los Angeles County-University of California Medical Center.

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# big fish,

little fish, sharks  
and whales in the muddy  
waters of academic medicine

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I CAN REMEMBER only three occasions when I felt less comfortable in front of an audience. The first was when I got married; and, as I recall, I didn't say *anything* then. The second was twenty years ago when, as a new assistant dean here

BY J. HOWARD OAKS

Little Ponds

at Harvard, I found myself addressing the Board of Overseers: Kennedys, Saltonstalls, Richardsons, Cabots, Nathan Pusey, and the like. I took consolation in the fact that I knew a great deal about my subject, "The Collegiate and Sociological Origins of American Dentists," and they knew little about it and probably cared even less. I relied mostly on statistics and James Thurber then. The third occasion was my maiden speech at Kel-

leher's Bar in Gloucester when I first ran for public office. That time, as I recall, most of the audience was too drunk to notice anything I said. Since you are neither in love, in ignorance nor inebriated, my task today is much more difficult—

particularly since I haven't done any teaching, research or patient care lately, or any other kind of useful service that might interest you.

Certainly everyone from 1956 would be sitting here if death had not robbed us several years ago of Harry Zehner, the wickedest wit in our class. Harry was so good at this kind of event that he would undoubtedly have been on the podium today. Since his
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**REALISTIC GOALS, PLUS THE RIGHT RATIO OF ASSISTANCE
COULD BE THE FORMULA FOR A HEALTHIER WORLD**



ILLUSTRATION BY JAMIE HOGAN

AND SELF-SUFFICIENCY,

HEALTH FOR ALL-MOST

BY CARL E. TAYLOR

HEALTH FOR all by the year 2000" is the primary goal of the World Health Organization. It has been endorsed by the governments of the 150 member nations of WHO, including the United States. But can we, as medical professionals, accept that goal and act on it for the U.S. and for the world? First, we might ask if the people who coined the slogan bothered to speculate about what might happen to such venerable institutions as Harvard Medical School and the Massachusetts General Hospital if we really did manage to gain health for all by the year 2000. Or, for that matter, what might happen to the incomes of this year's graduates?

Many physicians discredit the slogan as something between a naive deception and cruel hoax. Epidemiologists would like to change the wording to "Different diseases for all by the year 2000." Cynics believe that if we raise impossible expectations, the health

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professions will lose credibility in an inevitable backlash. In working on the background document for the Alma Ata Conference on Primary Health Care two years ago, I tried unsuccessfully to get the slogan toned down to say, "Health care for all by the year 2000." Each time I raised the issue someone from a developing country would object, "We really do want health for all."

I came to realize that there was a difference in the way the phrase was being said. People from developed countries would say "health for all," emphasizing the first word. People from developing countries would say, "health for all," placing the emphasis on the last word. Such subtleties spoke volumes about the different attitudes toward meeting health care priorities. Leaders from developing countries are demanding that health be acknowledged as a human right, but that each country must arrive at its



city ghettos and the rural poor.

Although we in this country may be too sophisticated to take it seriously, the slogan "Health for all by the year 2000" has had a remarkable effect of galvanizing efforts in developing countries. It has been a great source of hope and has triggered significant changes in health policy. With a goal anchored firmly in time, planners are trying to turn around their health systems, from following the Western model of high-technology, high-cost, hospital-based, specialized care to focusing first on minimal coverage for all.

An example of misplaced faith in technology was related to me recently by a friend from Nepal: In the waiting room of a Katmandu hospital, he overheard the reaction of a group of mountain villagers whose confidence in modern medicine was greatly enhanced by an elevator. They saw two old and sick ladies walk into a box; the doors closed; and a few minutes later, when the doors opened, out stepped two beautiful young women.

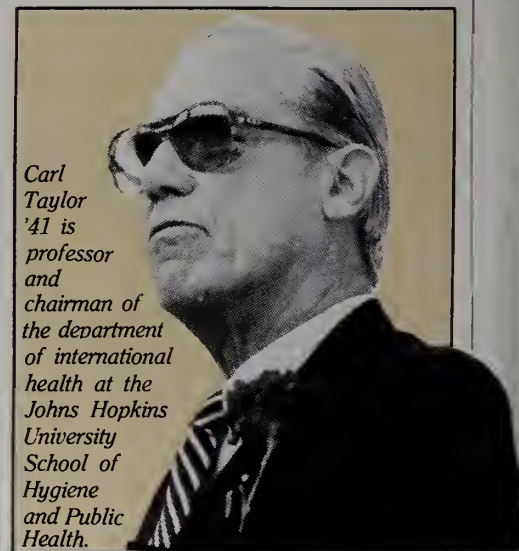
Although not as dramatic, many recent improvements in health are encouraging. In the mid-1960s, years of agricultural research resulted in a half dozen interventions that produced the so-called "Green Revolution"—more than doubling the production of wheat, rice, and other cereals. In each case, the specific methodologies developed from research were adapted to local conditions, enabling widespread implementation of extension methods. The resulting increase in output of poor countries provided temporary alleviation of the world's most serious food deficiencies and bought a little time in the race between food and population growth.

We now seem to be in a comparable position with respect to health. We have technical and management interventions that will give a minimum package of services to everyone as a human right. A massive and concerted worldwide effort can bring down both death rates and birth rates in developing countries close to the levels of developed countries and help to defuse

the population explosion. UNICEF has estimated that the cost of such a widespread program would be between \$12 and \$20 billion over a period of twenty years—roughly the equivalent of what is now spent on defense in less than two weeks.

What are some of the lessons we've learned in our efforts to create a healthier world?

The first is that some of our training is outmoded, and that professionals must stop encouraging the natural dependency that occurs when people turn over their health problems to us. We must promote self-reliance and increase the capacity of people to solve their own problems. A simple anecdote illustrates my point. My family and I arrived in India in August, 1947—six months before that country achieved independence. At a hill station in the Himalayas on the day independence was declared, a flag-raising ceremony was scheduled at dawn. Throngs of people were present. A band played



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ALTHOUGH we in this country may be too sophisticated to take it seriously, the slogan "Health for all by the year 2000" has had a remarkable effect of galvanizing efforts in developing countries.

own concept of health. Much of the confusion has arisen because many people have taken too literally the definition of health in the WHO constitution as "a state of complete physical, mental, and social well-being." This definition is the real hoax because it is impossible. The fact is that our medical advances tend to cause more people to survive with more diseases. Harvard Medical and the Mass. General have a secure future.

Generally acknowledged by developing countries to have been the most important health conference ever held, Alma Ata was all but ignored by both the media and by health professionals in this country. Why? Was it because we think we have solved the problem of primary care in the United States, or because our attention is on hospital care? Is primary care a problem only for poor countries? The current shift in political priorities in the U.S. suggests that the most affluent country in the world has scaled down expectations for its own people, from all to almost—not only in the definition of health but also in terms of eventual coverage of our big

as the sun appeared over the snow-capped peak of Nanda Devi to the east. The highest local official started to pull the rope to carry the new Indian flag to the top of the newly erected flagpole. The pulley jammed; everyone who could get his hands on the rope jerked and tugged, but it wouldn't budge. Suddenly, a small coolie boy darted out of the crowd, shinnied up the pole and hand-carried the flag to the top.

For me, that episode typified what has really worked around the world. Improvement and change have come mainly when people have been able to take things into their own hands. When I get discouraged by bureaucracies and health systems—whether in a developing country or in the U.S.—I remember the coolie boy. As health-care experts, we can be most effective if we provide people with the knowledge and means to solve their own problems.

Another important lesson of recent years comes with an understanding of the interaction between improvements in health and population growth. The concerns of governments and institutions about overpopulation are quite different from family perceptions of the social and economic value of children. We have found, however, that by combining family planning with other health and development activities for which there is a spontaneous and continuing demand, that motivation to limit the number of children will tend to evolve as part of an overall effort by the family to improve the quality of life. Birth rates have tumbled dramatically in most developing countries which have provided national family planning programs, comprehensive primary health care, and advancement in the education and status of women.

In our Narangwal projects in the Indian Punjab, we were able to provide comprehensive care to women and children for less than \$2 per capita per year. Infant and child mortality was reduced by 30-50 percent; the average height of all children in study villages as compared with control villages was increased by 2 cm, the average weight by 1 pound; psychomotor scores increased significantly; average duration of morbidity was reduced by one-fifth; average practice of family planning tripled; and fertility decline shifted from 1 percent per year to 5 percent per year. The combination of primary health and nutrition care with family-planning services provided by auxiliaries was six to ten times more cost effective than providing family planning alone. Measuring the utilization of services we learned that, prior to the project, upper castes and socioeconomic groups made much more use of family planning and health care than the poor. In four years, with specific targeting to those in need, complete equity in distribution was achieved because of greater acceptance among low-caste families.

Developing a workable program in primary health care involves, first of all, a systematic analysis to define the major health problems, balancing epidemiological definition of need with people's perceptions of their own needs. The most effective, appropriate, and inexpen-

sive interventions to meet these needs can then be identified. Reallocation of roles in the health team leads to delegation of responsibility to the periphery, so that tasks are carried out as close as possible to the village home by minimally trained personnel. A surveillance system can identify problems early and target services to the most underserved. In our work, we identified entry points when motivation for family planning could be promoted at particular times in the cycle of maternal and child health care. Systematic educational supervision and logistical support, as well as constant evaluation and feedback mechanisms, proved crucial to maintaining high quality of services.

Happily, our experience at Narangwal is no longer unique. Projects by our students in South India and Kenya have gone even further in showing how these principles can be applied. In Bangladesh, we collaborated in the Companyanj Project, which demonstrated in an extremely poor area that even illiterate women can provide simplified primary care. In a variety of countries and political systems, many projects have demonstrated *what* can be done. We now need to learn *how* the principles can be adapted for systematic implementation in national programs.

The outstanding national demonstration of a successful primary health care system is, of course, in China—a country which has focused heavily on prevention. China has proved that, paradoxically, resource constraints may sometimes lead to the discovery of important principles. In China, the relatively small percentage of low-birthweight babies is related to appropriate living patterns and excellent preventative care provided by the barefoot midwives. Remarkably, all births now occur to mothers between the ages of 25 and 29 because of the stringent family-planning program in that country. If a couple signs up for a one-child certificate, there is a significant financial incentive, free health care and education, better housing, and other benefits. If they have a second child they lose these benefits; and if a third child happens along, the parents get a ten percent cut in income. Furthermore, because children are the most valued and precious members of Chinese society, a couple who is having one will do everything possible to have a perfect child. Projections of world population by the year 2000 have been reduced from eight billion to about six billion, largely as a result of China's success in family planning.

India tried similar draconian measures in the early 1970s, and although Indira Gandhi's government suffered a public backlash in the 1974 elections as a result, the birth rate has fallen dramatically in half of the states of India. The main difference is that the Chinese have managed to implement their program without projecting the image of top-down government imposition. So far, the communities are running the one-child program themselves. In many communes, the women's social affairs committee is taking responsibility for decisions about

THE COST of a massive and concerted world-wide health program would be between \$12 and \$20 billion over a period of twenty years—roughly what is now spent on defense in less than two weeks.

who should marry whom, when, and how long the couple should wait before having their one baby.

I am concerned, however, that Chinese officials now seem intent on imitating the U.S. in science and technology. They have decided to upgrade the barefoot doctors to rural doctors who will be part of the health system rather than the community. They will start permitting private practice. In our collaborative research with the Chinese, we hope to help them discriminate between those things in our system that are worth copying and mistakes they would be better off not repeating.

It is easy to believe that the world is a mess; it is much harder to be optimistic. But I see much that is encouraging and hopeful; every problem, after all, carries with it an exciting opportunity for solution.

My hopes may seem exaggerated to some, but faith and optimism are needed to meet the challenge of today's world. It does take a measure of faith to keep working toward goals that most people consider hopeless. I am reminded of the two nuns who were driving in the country and ran out of gas. At a nearby farm they found an old man who agreed to let them have some of the fuel from his tractor. Being the appropriate age, he had a urinal handy, which he cleaned out and filled with gas. As they were pouring the gas into the tank of their car, a traveling salesman pulled up alongside. He drew the obvious conclusion and commented, "Ladies, I don't belong to your religious persuasion, but I sure admire your faith!"

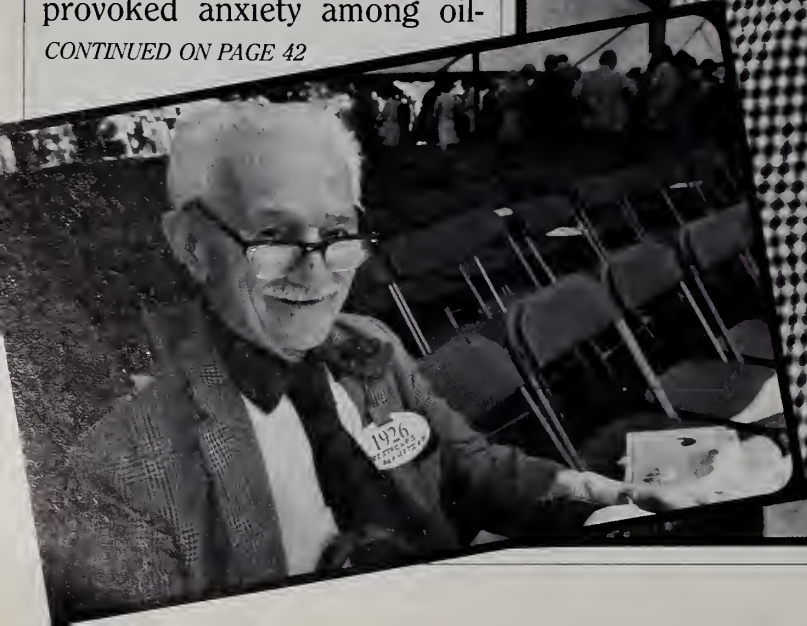
My optimism is based more on the opportunities I see for a new style of international collaboration than on technical assistance. Achieving "almost health for almost all" will depend on a new network of links between health institutions in the U.S. and abroad. Such partnerships should spur developing countries to achieve a higher level of self-sufficiency; and, in the process, we may learn better ways of solving our own problems as well. ♦

1981

ALUMNI DAY

In 1956 Eisenhower was elected to a second term as president, despite some concern about his failing health; U.S. educators reported a “growing recognition of the shortage of brain power, especially scientists and engineers”; NIH received an 80 percent increase in appropriations from Congress; three physicists named Bardeen, Brettain, and Shockley shared a Nobel prize for developing the transistor; Egypt’s nationalization of the Suez Canal provoked anxiety among oil-

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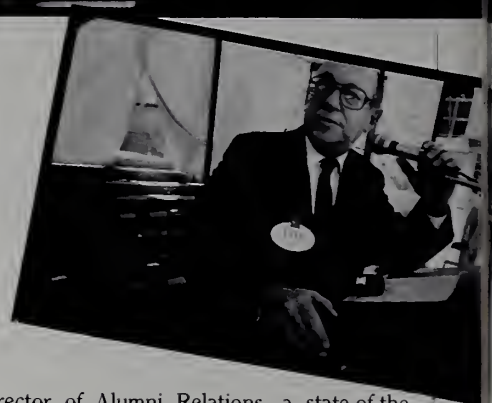
dependent countries; Jack Lemmon was honored with an Academy Award for his role in *Mr. Roberts*; Don Larsen of the New York Yankees pitched the first perfect game in World Series history, against the Brooklyn Dodgers; and Harvard Medical School graduated its 169th class.

A lot has happened in the last quarter-century, and when the class of '56 returned to HMS this year for their twenty-fifth reunion, they brought with them their own personal chronicles of change, plus a testimony to certain immutable values. Once a leader, always a leader, Chase N. Peterson (who was a class officer in student days) acted as moderator for the Alumni Day Program. Dr. Peterson's professional life is a tale of two cities—Salt Lake City and Boston. His work at Harvard College as dean of admissions and financial aid (1968-1978) was sandwiched between positions out west in clinical medicine and health administration. For the

last three years he has been vice president for health sciences at the University of Utah. "At reunions we come to see ourselves in the mirror of our classmates," Dr. Peterson reflected. "That's self-conscious but it's also liberating."

In a talk entitled, "Little Ponds," J. Howard Oaks described his departure from the swampy banks of Harvard for a stony brook in the State University of New York, observing that the two institutions "have nothing in common—and everything in common." Robert Goldwyn, who is mentioned in the 1956 *Aesculapiad* for distributing an article to classmates on the fifth amendment during the McCarthy hearings ("some HMS's dismissed it as liberal poppycock, others were grateful"), articulated a more personal concern in his Alumni Day speech, namely the disdain he senses from full-time faculty toward their part-time colleagues. And Marc Hansen's search for the perfect 7 has led him to the conclusion that generalists and specialists need to "integrate their different perceptions and competencies to better serve the needs of patients."

Welcoming remarks from Perry Culver '41,



Director of Alumni Relations, a state-of-the-school address from Dean Daniel Tosteson '48, and revelations from members of other pentad classes—Carl Taylor '41, Clement Hiebert '51, and Yeu-Tsu Lee '61—rounded out the morning's program.

Then it was time to get down to business.



Eban Alexander '39, outgoing president, called to order the eighty-seventh annual business meeting of the Harvard Medical Alumni Association. Minutes of the meeting of June 6, 1980 were presented by secretary Melvin P. Osborne '42 and approved. The election of new officers and councillors—by 2,114 alumni ballots—was announced: Jane G. Schaller '60, president-elect (the first woman elected to this office in the Council's history); Grant V. Rodkey '43, secretary; and Elbert P. Tuttle, Jr. '51, councillor-at-large. Other new councillors are Robert S. Lawrence '64 and Mary A. Stefanyzyn '78.

After welcoming the new officers and councillors, Dr. Alexander expressed his gratitude to those individuals whose terms have been completed: Gordon A. Donaldson '35, past-president; Dr. Osborne; and Phyllis I. Gardner '76, Ronald A. Malt '55, and Larry G. Seidl '61, councillors.

Edward H. Aherns '41, Phillip Pittman '75, and Claire Stiles '56 have completed terms of service on the Alumni Survey Committee. Thanking them for their work, Dr. Alexander noted that the committee's report on problems in premedical education at Harvard will be published in the fall issue of the *Alumni Bulletin*. New members of the Alumni Survey Committee beginning three-year terms are Louis LaLuz '79 and Donald Sweeny '40.

A recap of other new business:

- A proposed amendment to the constitution, which would make physicians in training and research positions at Harvard-affiliated hospitals eligible for associate membership in the Alumni Association, received unanimous approval.
- Returning alumni saw red this year—thanks to a gift of a medical school banner which served as a backdrop to the quadrangle

events. Joseph A. Barr and Alan Hoffman were the masterminds behind the banner and presented it to the school on behalf of the class of 1960.

• Special recognition was in order for members of some of the earliest classes in attendance: Harry Solomon '14, William B. Castle '21, and Max Tennis '22. Dr. Castle alluded to the anecdote about himself in Marc Hansen's talk, with the remark that he had always followed advice to "get a good car and keep it."

Harvard enjoys four times more monetary support from its alumni than any other medical school, Dr. Alexander pointed out, a fact which in no way diminishes the continuing need for alumni generosity. He introduced Carl W. Walter '32, dubbed HMS's "official pickpocket" by one returning alumnus, in reference to his role as chairman of the Alumni Fund. Dr.

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UNTIL THE STIGMA

ON HIS ACADEMIC STATUS IS REMOVED, THIS
PHYSICIAN WON'T LIVE HAPPILY EVER AFTER

ONCE UPON A TIME...

THERE WAS NO PART TIME

HE REMEMBERS HAPPIER days before the Great Schism, when there was less cliquism in the care of the sick, when there was no part-time or full-time, when no one wore an armband. Then he was younger, of course, and perhaps naive; but he thought that the battle was against disease and suffering. Now he sees a diverting conflict between those who should be allies. The cynicism of having lived a half-century leads him to wonder how there could ever be peace in the world, among vastly disparate nations, if those of the same country, even of the same state, and those of similar values, education, and professional milieu seem unable to bridge without rancor a comparatively small gap.

This graduate is perplexed by the attitude of his medical school, which trumpets to its students the value of primary care, yet in many ways ignores those in its midst who render it. These practitioners, like himself, have become a minor majority—or, a major minority—subject to some of the unpleasanties reserved for an outgroup. It is a disturbing paradox that now, when there is less discrimination on the basis of color and sex concerning who gets into medical school, there is a different kind of prejudice at the other end, after residency, in terms of what course the newly trained doctor may take. At Harvard, the mainstream is full-time; the side channel is part-time.

This alumnus regrets the change that has led to subdividing the genus, physician into the species part-time or full-time. In medical school and residency, he recalls, those who taught him clinically were judged by the standard of their patient care. Now another consideration intrudes: that of the flag under which they happen to sail. Did not generations of medical students and physicians gain inspiration from those who now would be called part-time: Paul Dudley White, Samuel Levine, Leland McKittrick, Dwight Harken, being a few recent example? Did not those of the town teach, do research, and, in fact, build this medical school? Did having private patients and an income from them diminish their example?

Should we remember and reread William Osler in a different fashion because his annual earnings were large even by today's standards? And has not this theme of income difference between part-time and full-time been overplayed? As Dr. Robert Petersdorf has commented, those who are full-time are no longer "threadbare"—far from it! The true difference lies not only in the services performed by those who are full-time but in



BY ROBERT M. GOLDWYN

the method of payment. A new law of the marketplace has evolved: the more remote the physician from the actual transfer of money, the less sullied he feels. The ramifications of this self-righteous and hypocritical thinking have done much to congenial differences among the heirs of Hippocrates, whose only reason for existence as a profession are the ills common to all mankind.

So standing here, this graduate, though grateful for having survived and arrived, laments the factionalism that has interfered with the personal fulfillment of many of his colleagues. He himself has been fortunate professionally but feels some discomfort, rather than undiluted exhilaration, at being a last survivor. At a reunion ten years ago, one of his classmates, a so-called "part-timer," remarked: "I expected to become obsolete, but not so soon." How unfortunate the breach between those of white coats and those of suit coats: a disconcerting modern parallel to Stendhal's *The Red and the Black*, when the way to get ahead after the fall of Napoleon was by means of the cloak of the clergy, the black, and no longer the uniform of the army, the red.

Another colleague, a part-timer, confessed that he changed into a white coat when he went to the hospital so that "they will forget that I am not one of them"—a pitiful commentary on the alienation and insecurity of those who should feel a sense of belonging. They who bear the brand of "part-time" resent its connotations. Implied is a partial commitment, an incomplete dedica-

tion. "How can I be part-time?" one wonders. "Do I not rise early in the morning, work in the office and at the hospital helping patients, teaching residents and medical students, and then return home in the late evening, at least five to six days a week? Except for vacations, am I not always on call? Do I not plan to stay in one location for the rest of my professional life? To whom am I part-time? Certainly not to my patients, not really to my hospital, and not in performance and devotion to my medical school, even though it may regard me as such."

In Pre-Mao China, laborers were divided into three classes. Those who worked all year for one family were called full-timers; those who were

CONTINUED ON PAGE 50

Robert M. Goldwyn '56 is clinical professor of surgery, (need we say) part-time at Beth Israel Hospital, and a member of the BULLETIN's editorial board.

A SEARCH FOR THE PERFECT 7

CONTINUED FROM PAGE 28

generalists, we should recognize the need to better understand the particular qualities of perception and problem-solving that serve to hold together a generalist's work.

An adequate discipline for generalists will have much in common with an "art." I use "art" in the formal sense of trained and sophisticated perception: the ability to organize that perception into meaning, understanding, and effective action. I am convinced that these qualities become more important as one accepts a broader agenda as a physician by acknowledging the relevance of all of each patient's problems.

The biomedical revolution of the sixties and seventies, which nourished us all, limited the problem to be understood until one could control enough relevant variables to do "proper science." Our debt to that strategy is great. Many needs and much promise remain. In 1981, however, we are beginning to realize the constraints of that strategy: We understand the cell far better than we understand the person, to say nothing of human society. The risks of this unbalance and the incompleteness of our understanding of individual and society defines an agenda for medicine even more important than the continued growth of biomedical science. In this time of "nuclear madness," to use Helen Caldicott's phrase, we must hope for more of the generalist's breadth of understanding if we are to avoid catastrophe, let alone to care more effectively for patients.

I am not primarily making a political point; I am arguing that it is time for medicine and for medical education to begin a serious, concerted, and enthusiastic intellectual re-examination of the generalist's work, and to support the research and scholarship which will help us to understand it better—and to do this on a scale appropriate to the difficulty and importance of the task.

I will only suggest what needs to be involved in such re-examination and cite several reliable guides. Gayle Stephens, who has identified family practice with "reform" and "counterculture" in medicine and medical education, talks of learning to care for person and family in the wholeness of their lives—biological, behavioral, social, and spiritual. "Reform" for Stephens involves balancing our reductionistic bias, creating more effective and integrative patient care, and grappling with value and meaning in life.

George Engle, Ian McWhinney, and others, speaking from somewhat different perspectives, have similarly called for integration of clinical biomedicine and the social sciences. They argue that physicians must move "beyond diagnosis" and become as effective and rational in caring

for people as they have become in analyzing and managing pathophysiologic processes.

As for medical education, I believe Lawrence Weed is largely right in trying to make it a problem-solving process, just as patient care certainly is. Learners learn best by first perceiving and adequately defining a relevant set of problems and then learning to mobilize the appropriate tools and methods to address them. We forget how powerful are the problem-solving

IF MEDICAL students are *de facto* generalists, we should recognize the need to better understand the particular qualities of perception and problem-solving that serve to hold together a generalist's work.



skills which students bring to medicine—skills which are not all measured by the science G.P.A.

Finally, it is time to resolve the ambiguity of my title. What about the "Perfect 7"? In a witty and thoughtful book on the psychology of communication, Goerge Miller has a chapter which examines that ability of the human mind to perceive and discriminate between stimuli. The title is, "The Magical Number 7, Plus or Minus Two: Some Limits on Our Capacity for Processing Information." He points out that, along a given dimension, such as a scale matching some quality (size, intensity of sound, taste, for example), human subjects can reliably separate stimuli into only about seven classes. By attending to additional dimensions, the mind can produce an incredible richness of discrimination of pattern. The mind's maximal perception, however, seems to be achieved in making fewer discriminations along more dimensions. Education provides a basis for competence to choose the relevant dimensions. Miller's conclusion provides an intellectual rationale for the generalist, and perhaps can help us chart new directions for medicine and medical education:

We might argue that in the course of evolution those organisms were most successful that were responsive to the widest range of stimuli in their environment. In order to survive in a constantly fluctuating world, it was better to have a little information about a lot of things than to have a lot of information about a small segment of the environment. If a compromise was necessary, the one we seem to have made [the human mind] is clearly the more adaptive.

Within limits that have their basis in neurophysiology and the functioning of the mind, generalist and specialist each strike a compromise—less about more and more, or more and more about less. The work and "discipline" of the generalist in medicine is and must be complex, dealing as it does with patterns which serve to encode and store vast amounts of information. It can be as demanding and fascinating as any within the profession.

In spite of its unique intellectual substance, the discipline of the generalists remains among the least explored medical frontiers. Achieving a specifically medical understanding of person and society is worthy of our finest minds and efforts. I hope for a future in which generalist and specialist can integrate their different perceptions and competencies to better serve the needs of patients. I trust that Harvard will provide leadership on this frontier as it has so productively on others. ♦

SELDOM COME BY

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teen-year-old school teacher, had somehow obtained an air ticket to America and traveled seven-thousand miles to search for the surgeon who failed to correct his condition while in Africa. He spoke Sousou, Malenky, Foula, and French, and had \$25 in his pocket. It was apparent that he fully expected to be met, even

years ago—I have tried making one or two house calls a week, usually, I confess, on our country neighbors and friends. It is an altogether satisfying thing to do. Last week an elderly Catholic woman, who was pleased at the attention and examination, ended the visit with an appreciative "Thank you, Father."

ONE LEARNED not to ask, 'What is the matter?'

It would surely bring the rejoinder,

'That is for ye to find out.'



though I had not the slightest inkling that he was on the way.

Our heart-lung machine at that time was shut down for repairs, so Gordon Scannell at the MGH kindly agreed to replace his aortic valve. The surgery went well and the patient returned to Portland; he remained with us for five months. We took him camping, which he regarded as the best part of his trip because it was "just like home"! I asked him one time, "What would you have done had I not been at the airport when you arrived?" He replied, "That could not have happened because my mother at home was praying that we would meet!"

The experience with our African friend illustrates again how a surgeon's life can be affected by a single patient. When patients come at assembly line speed, there is danger of losing sight of the person inside of the patient. Howard Spiro may have been right in suggesting that milli-osmols are for the young doctors and house calls the reward for physicians tottering on the threshold of the twilight years. Since hearing his address—presented on this spot five

WITHIN EACH OF US
THERE IS A LONGING TO
BE FOCUSED, TO BE FUL-
FILLED, TO BE FULLY

used. How on earth did we wind up as 'providers' while our patients became 'consumers'? There is no simple answer; but in part, at least, the problem is of our own making, beginning in medical school and continuing through our sometimes insensitive internship and residency years. I remember when I was a resident in the emergency room at the MGH, a medical student was attempting to repair a facial laceration of an intoxicated woman, relying more on wrist restraints and her drunken state than on local anesthesia. We heard the periodic bellowing of an obviously angry patient interspersed with the voice of the student shouting, "Am I hurting you?" (Everyone knows that drunks, illiterates, foreigners, and old people will understand if only one speaks loudly enough.) In due course the medical student leaned over to apply the dressing, whereupon the patient's hand found, encircled, and squeezed a particularly sensitive

portion of his anatomy. And now it was her turn to ask, "Am I hurting *you*, Doctor?"

The surgical residents we train are preoccupied, as always, with the number of operations they are allowed to perform. One house officer at our institution dropped a Bovie pencil, impaling the needle point in his Achilles' tendon. As if that weren't bad enough, the assisting senior surgeon had his foot on the switch, activating the electrocoagulation unit. An instant St. Vitus' danced ensued. Later I inquired why the resident hadn't simply broken scrub and withdrawn the instrument from his tendon. "What," he asked incredulously, "and risk losing the case to the Visit?!"

The resident makes sign-out rounds in the evening by touching each chart as he recites to his replacement, "The gallbladder in 308 is okay. Check the lytes and the cardiac terminals on the cabbage in 310." Between charts, computer terminals, and phones, our nursing stations are awash with RNs, LPNs, green aids, lemon aids, medical students, and residents. In the midst of this ordered chaos, I think of John Olds sitting on his horse in a snowstorm, compass in hand, making his way across the frozen bay to see his patient. And I recall that summer under the northern lights with Jerry Foster and Arnie Nevis and, most of all, I remember the dawn when Mrs. Pardy got twins, Twillingate two new citizens, and a fledgling doctor a cup of black tea.◆



CLEMENT A.
HIEBERT '51

Caring

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have had an extraordinary gift of grace in the years remaining. How we live matters no less than how long we live. Surely, that's not just determined by what doctors do; nonetheless, what they do makes an enormous difference for many of us.

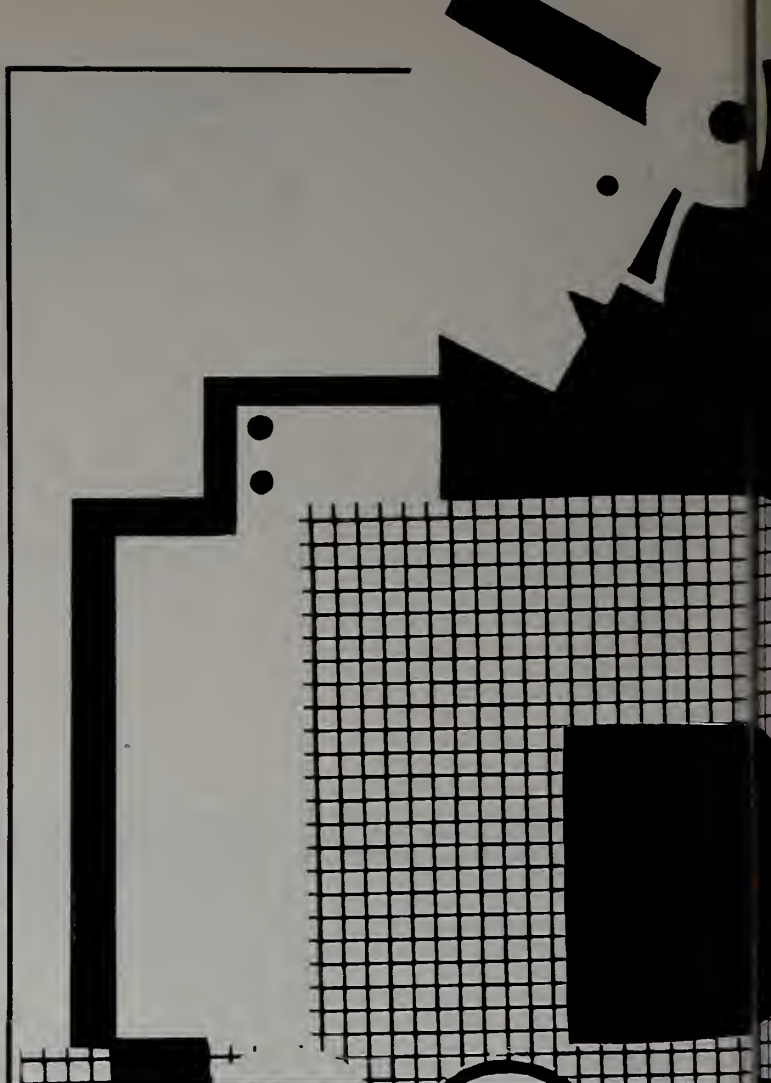
That's why I congratulate the parents in this audience for the great good fortune your children represent for all mankind. They can make the world a better place by what they do, a privilege of extraordinary magnitude. There are difficult problems yet to solved. The past provides assurance that they will be solved, perhaps by some of today's graduates. We thank you in advance for the marvels your children may bring.

I turn now to my colleagues on the faculty. You share with me great pride in the excellence of our students. It is hard to believe that the quality of Harvard graduates was so different a century ago. According to an apocryphal story, when the newly appointed president of Harvard, Charles Eliot, proposed a written examination as a condition for receiving the M.D. degree, the dean of the medical faculty had to tell him that he "knew nothing about the quality of Harvard medical students. More than half of them could hardly write." How happily far from that day are we!

Some will credit the quality of our graduates to the skill with which they were selected; others to the skill exhibited in their instruction; still others, to both. I would add that the excellence of this faculty results, in part, from the calibre of our students, whose questions stir us to remedy our ignorance. But there is pride enough for all of us to share; we needn't quarrel about how to apportion it. Our students have been fortunate in having been exposed to so excellent a faculty; to have had a faculty-to-student ratio many times greater than that in most of the world's medical schools; and to study in an educational environment enriched by diversity in sex, in age, in ethnic background, and in social class. For all its imperfections, this institution has been responsive to student criticism. I wish that had been true in my school where, as a woman, I was present on sufferance and where my classmates were all cast in a common mold.

It is, of course, not enough to be satisfied with what we do well; commencement provides the occasion for reflecting on ways to do it better. One complaint students often voice is that the caring aspects of doctoring receive insufficient attention amidst our emphasis on the technical aspects of patient management. Moreover, they lament that the obsession with work in this academic medical center makes much of their time joyless. In my view, they are too parochial when they ascribe this to Harvard or to New England puritanism. From my experience at other leading medical schools, these very problems afflict much of the medical education system.

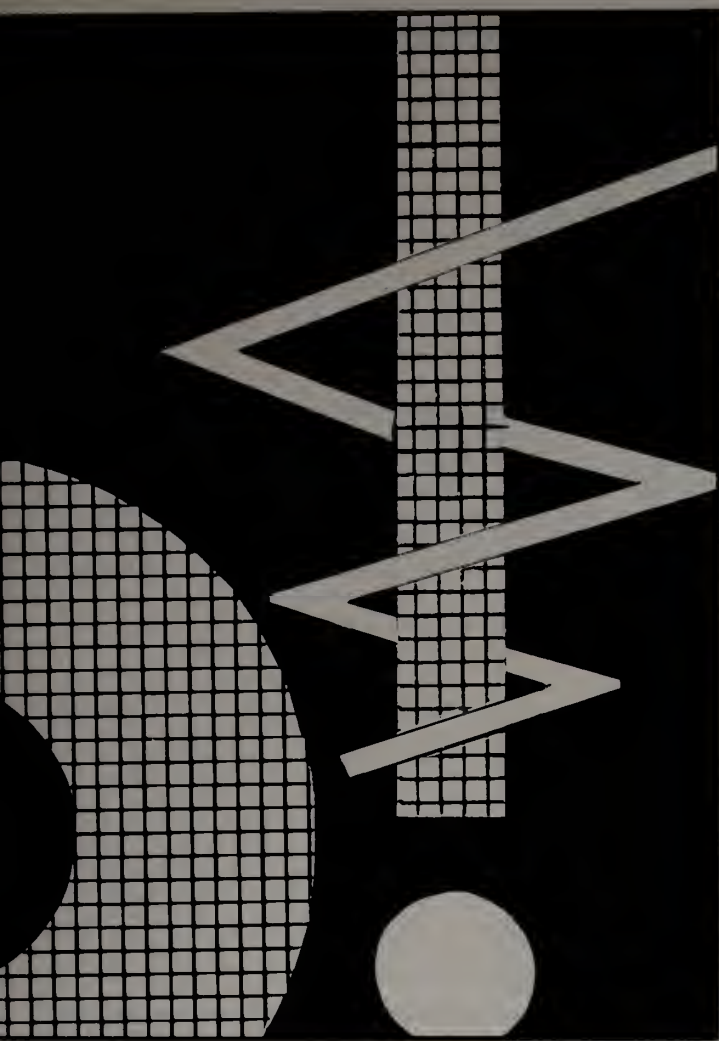
Sociologists tell us that humanism among students decreases and cynicism increases during the four years of medical school. A recent survey of pediatric interns revealed that they reported increased confidence in their ability to manage physical problems as their internship progressed; yet at the same time they reported a *decrease* in the satisfactions they derived from caring for their patients. Some of our medical students and house officers complain that staff have little concern for them as persons. Do I go



IF WE DO NOT CARE FOR OURSELVES,
FOR OUR COLLEAGUES, AND FOR
OUR STUDENTS AS WE SHOULD CARE FOR
OUR PATIENTS, THEN THE ENTIRE
ENTERPRISE OF MEDICAL EDUCATION
WILL LOSE ITS FUNDAMENTAL MEANING
AS A HUMAN ENDEAVOR.

too far in speculating that if students perceive faculty to be indifferent to their needs, this indifference contributes to their distance from, and diminished regard for, the patients they are asked to treat?

Medicine is a demanding taskmaster. No one of us can fully meet its challenges. There is no end of material to study or of patients in distress. What has rightly earned this profession honor is the willingness of most of its practitioners to put their own comforts aside to respond to patient needs. If we add to those demands on time personal ambition, keen competition in an academic environment, and the need to secure external funding, then all of the hours of the day and the week can be entirely consumed. If we acknowledge that competition can be a spur to achieving the best, let us also recognize that it can grind down sensibility. I contend that if we do not care for ourselves, for our colleagues, and for our



students as we should care for our patients, then the entire enterprise of medical education will lose its fundamental meaning as a human endeavor.

I reject out of hand any claim that the problem with medicine is too much science. If there is to be any hope of doing better tomorrow than we do today, we need *more* science, not less. The error lies in too narrow a view of the sciences relevant to medicine, which must include the social and the behavioral sciences. More than that, for medicine to be effective, knowledge must be enriched by wisdom and compassion. What we are and how we act is no less important than what we know. All of this was said more beautifully than I can say it by Francis Weld Peabody, professor of medicine at Harvard and chief of the Fourth Medical Service at Boston City Hospital some fifty years ago, who wrote:

The good physician knows his patients through and through, and his knowledge is bought dearly. Time, sympathy and understanding must be lavishly dispensed, but the reward is to be found in that personal bond which forms the greatest satisfaction of the practice of medicine. One of the essential qualities of the physician is interest in humanity, for the secret of the care of the patient is in caring for the patient.

To that beautiful statement, I would add only that the secret of the education of the student lies in caring for the student.

I begin the last of my three speeches, this time to the graduates. You saw through the charade when I pretended to address to the faculty comments about medical education that were really meant for you. As interns, you will become the teachers of medical students; in a few years, many of you will hold faculty appointments yourselves. If there is to be hope of change, you are the repositories of that hope.

You see our limitations more clearly than we can. I suspect you will become more charitable toward us as you become aware of the pressures

I REJECT OUT OF HAND ANY CLAIM THAT THE PROBLEM WITH MEDICINE IS TOO MUCH SCIENCE. IF THERE IS TO BE ANY HOPE OF DOING BETTER TOMORROW, WE NEED *MORE* SCIENCE, NOT LESS.

which will make you more like us than you may want to be. But I urge you not to let those forces make you into mere copies of your teachers. Whatever our virtues, those virtues will be insufficient to the challenges and the expectations of another day. You will construct the medical education of the future, hopefully in a way which will allow your students to profit from your recognition of where we have fallen short.

There is a final word I would leave with you. In my years at Johns Hopkins, I had the rare good fortune of knowing Ludwig Edelstein, a distinguished professor of humanities and a scholar of classical medicine. It was from Edelstein that I learned the words of Libanius, a physician of the fourth century A.D. Libanius addressed the following words to young physicians starting out on a medical career:

You desire to be one of the healers of sickness;
you had the benefit of good teachers.
Now, practice your art faithfully.
Be reliable;
cultivate love of man;
if you are called to your patient, hasten to go;
when you enter the sickroom, apply all your mental ability to the case in hand;
share in the pain of those who suffer;
rejoice with those who have found relief;
consider yourself a partner in the disease;
muster all you know for the fight to be fought.
Consider yourself to be of your contemporaries the brother [or sister],
of those who are your elders the son [or daughter],
of those who are younger the father [or mother].
And if any one of them neglects his own affairs,
remember that this is not permissible for you,
that it is your duty to be to the sick what the Dioscuri are to the sailor in distress. ♦

THERE WAS NO PART TIME

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hired by the day were called dailies; those who farmed their own land and worked only for one family at New Year, during festivals, and when rents were being collected, were called part-timers. That system, at least, had the virtue of precision.

This graduate would like to remain true to one of the tenets of his

A NEW LAW of the marketplace has evolved: the more remote the physician from the actual transfer of money, the less sullied he feels.

own ease, his own safety, his own advantage, his own hopes, his own appetites, his own lust for power. They end therefore by subjecting everything to a common average, distorting and even falsifying the ideals they were to serve. Institutions are nevertheless as necessary to the functioning of any and every branch of human society as are the less noble parts of our bodies. We cannot do without bladder and intestines. Unable to get on without them, we see to it that they are kept in good order and function for the good of the body as a whole and not for their own pleasure. Institutions are of the same nature, and their activities must be carefully watched over so that they do not cease to serve us."

This alumnus supposes that there are those in this audience who are inwardly groaning, as Freud supposedly did when he asked, "What do women want?" The answer of course—not only for women, not only for part-timers, but for every human being—is that he or she wants to be given, at the least, equal opportunity, based on ability, and to be judged fairly according to performance. Although medicine may have recorded some brilliant successes, our knowledge is still relatively primitive. Disease and death continue to be the victors. No person and no group should have the arrogance to believe that it alone has the answers, that it alone has found the royal road, or that it has the concession for any patient or any illness. The immutable crux of our calling is the singular alliance between patient and physician. It cannot be established by edict,



surgical guild: to remain steadfast, even at times foolish, in optimism, no matter what the reality. Somehow, he hopes, Harvard will mend its parts; the wound will cease to fester. But delayed healing is too often a feature of corporate bodies. Bernard Berenson, though faithful to his *alma mater*, which is ours, nevertheless said this about institutions: "I regard them big or little, hoary with age or with their plaster still wet, as necessary evils. They exist to actuate ideas, desires, and ideals. But they can work only through individuals, subject to their animal nature, each working for his

but must be forged by work and trust. Let us extricate ourselves from the traps and trappings of our profession that have less to do with the misfortunes of our patients than with our own vanities. Let us curb our lust for homogeneity so that we can regard diversity not as a threat, but as an opportunity for creativity. Let us divest ourselves of stereotypes that encumber our relations with colleagues and deflect us from the real objectives: commitment, competence, and compassion. That should be a full-time job for all of us whose earthly stay is truly part-time. ♦

L.A. IS THE PLACE!

CONTINUED FROM PAGE 33

have made impressive advances in the care of patients with severe burns; in the successful reimplantation of extremities and fingers, particularly with the use of microsurgical techniques; in controlling or wiping out communicable diseases; in mass screening of esophageal and nasopharyngeal cancers; in early detection of hepatomas; and on many other medical and surgical fronts. With infections and parasitic diseases on the decline, the leading causes of death now are cancer (25%), cardiovascular disease (12%) and stroke (19%). In the United States, incidentally, those killers account for 17%, 39%, and 11% of the mortality, respectively.

I saw two operations—a thyroid lobectomy for adenoma and a craniotomy for a meningioma—performed with the patients under acupuncture anesthesia. When Dr. Michael DeBakey visited China in 1973, he had watched an open heart operation using acupuncture anesthesia that included one hour of total extracorporeal circulation. Dr. DeBakey commented that it was “interesting to observe that even with the heart in ischemic arrest, the patient could be aroused, could open his eyes, and even respond to questions. The surgical procedure was performed smoothly and with technical skill.” Although as a treatment for pain acupuncture has been in use for hundreds of years, acupuncture anesthesia was discovered just over two decades ago, in 1958. It has since been utilized in more than two million operations. Acupuncture works best in intracranial, head, neck and chest procedures. Currently, however, it is used less than ten percent of the time, since it takes an hour or longer to give the desired effect and gives very little muscle relaxation.

In April, 1980 I returned to China for a second visit, this time as program leader of a surgical oncology tour of forty American surgeons and their families. The Chinese physicians were much more relaxed and more open than they had been during my previous trip. We heard unbelievable accounts of the events of the Cultural Revolution (1965-1976). All schools were closed during those years, and teachers, professors, researchers and physicians were sent to do hard labor. As Dr. Claude Welch has commented, “It was the anti-cultural revolution,” and the most uncultured period in the history of China. One physician told me of having to clean the bathroom while her husband was forced to sweep the yard. They were not allowed to see patients. Many people, sent to see unqualified personnel, asked to see the doctor who was sweeping outside. “A pervasive belief that matters would be better in the future,” continued Dr. Welch, “must have sustained physicians in those dark days. . . . Above all they have demonstrated Osler’s primary virtue: equanimity in the face of overpowering odds.”



YEU-TSU N. LEE '61

When we were fleeing ahead of the advancing Japanese, the most important papers my parents had to carry were their college diplomas. They needed those pieces of paper to establish their qualifications so they could get new jobs. In contrast, here in the United States there are directories, indexes, registries, and federal, state, and private organizations that exist to verify a person’s credentials. Recently I had the occasion to look in the Science Citation Index, where one can find a list of one’s own publications, as well as information about how often, when, and by whom a paper is quoted. It was in this search that I discovered the disadvantages of my short name. When I looked under Y. N. Lee, I found a chemist, and under Y. T. Lee, a physicist. I decided to use Y.-T.N. Lee, but alas, a bacteriologist is listed under Y.T.N. Lee! In order to preserve my identity I have had to add “Margaret” to my name.

After years of hard work, the Union Pacific and the Central Pacific Railroads were linked in Utah in 1869. After that, many of the Chinese who had worked for the railroad dispersed. One man, who settled in a city, said that his final wish was to be buried in his native place: Canton. There was no way his body could be shipped back to China, so instead, the people decided to change the name of the city to Canton. I was told the city was Canton, Ohio, but I have been surprised to learn that there are Can-

tons in at least fifteen other states as well.

The first Chinese in California is said to have been a man who arrived in 1815 and worked as a cook for the Spanish Governor in Monterey. I feel quite at home in the state, since five percent of its 23.7 million people are Asians. Our secretary of state is a Chinese-American woman, March Fong Eu. We are able to buy Chinese food in the supermarkets, and there are seven theaters in Los Angeles that show only Chinese movies.

Six years ago we bought a house in Los Angeles. It is located in a subdivision of the estate of the late silent movie star, Antonio Marenco. One of the many conditions the first owner had to agree to in 1936 (the year I was born) was that the premises could not be occupied by any person not of the Caucasian race. However, in the original contract it was stated that “all of the restrictions and conditions herein contained shall . . . terminate . . . on and after January 1, 1974.” We came to the right place at the right time.

In 1790, the center of the American population was in Maryland. Since then, the population centers have drifted westward. An increase of 18.5 percent in California’s population during the 1970s was especially important in moving the national center of population west of the Mississippi (to DeSoto, Missouri). The 1980 census showed that for the first time more than half of the people in the United States now live in the western and southern states. And the center is moving toward Los Angeles!

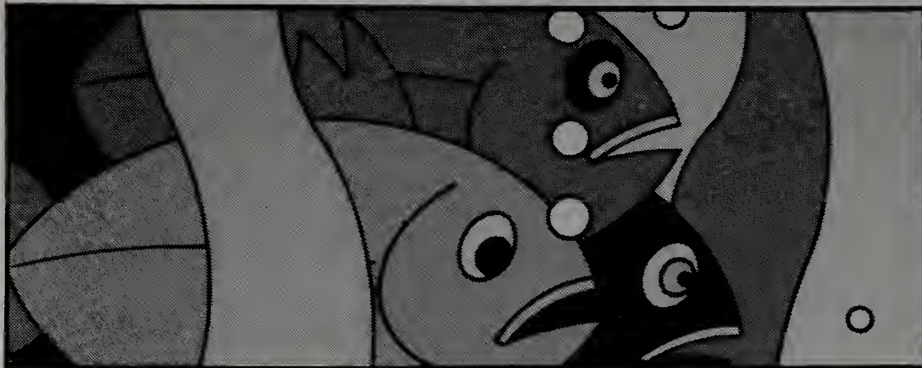
Our city is celebrating its bicentennial this year; in 1984 it will host the Olympic Games. A new \$124 million international airport will be completed by then, “the best and most functional” terminal in the world. The Olympic Culture Commission has proposed a two-month program of dance and film festivals, theater, music, and art exhibitions before and during the games.

Where and what is Zzyx, anyway? It is a hot spring near Highway 15 between Las Vegas and Los Angeles. Please don’t go astray there, because L.A. is the place! Go west, young men (and women)! Come all ye young at heart, too, and don’t stop until you see the East!

There is a book of prophecies written by Lee and Yuan in 618 A.D. (Tang Dynasty). It correctly predicted many of the subsequent dynasty changes in China, the Boxer’s War, the birth of the republic, the revolution of the communists, the Second World War, the coming of airplanes, submarines, the atomic bomb. But I am happy to report that the final verses predict a true utopia: “No more city walls, no more fighting forces! There will be no distinctions of red, yellow, black, or white. Peace will prevail in the East, West, South, and North.”

LITTLE PONDS

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DECIDING TO be a dentist was like picking your subspecialty before you picked your parents. Before you even knew you wanted to be a fish, you were in a funny little pond.

act was impossible to follow, I would most likely be in the audience and probably in the aisle. Twenty-five years ago tomorrow Harry stood here and said that when a patient of his at the General died of massive, generalized peritonitis, he wrote in the record: "The patient died of Mass. General Peritonitis." A few minutes later, commenting on one immutable event, he observed that in spite of medicine and statistics, inevitably the death rate remained one per person. That day Paul Dudley White was the guest speaker, but Harry was the star. At his last reunion in 1971, Harry noted that everyone on the class necrology had died of causes no one ever studied in medical school. Harry was not only funny, he was right. The death rate remains one per person, but the patients never die of diseases we studied in school.

When I was little I used to worry more than I do now. In particular I worried about what I would do when I grew out of my little world and could no longer take refuge in merely going to school. I also worried about whether school would help me decide what to be if I grew up, or

help me when I went to work. Would I have learned the right things? Would I be able to do *anything*? Would I want to?

Growing up in a family of school teachers and ministers was no consolation, but deciding to be a dentist helped quite a bit. It seemed to offer a clear, precise goal, easily pursued by getting good grades in predetermined courses and predetermined schools—and finally I was here,

with 118 first-year medical students and eleven other dental students. We might have felt a little better remembering that line from

Whitehead: "Education is discipline for the adventure of life." Too bad it didn't say 'preparation' instead

of 'discipline', but for a little while, anyway, it all did seem as simple as "Know tuberculosis and syphilis and you'll know medicine."

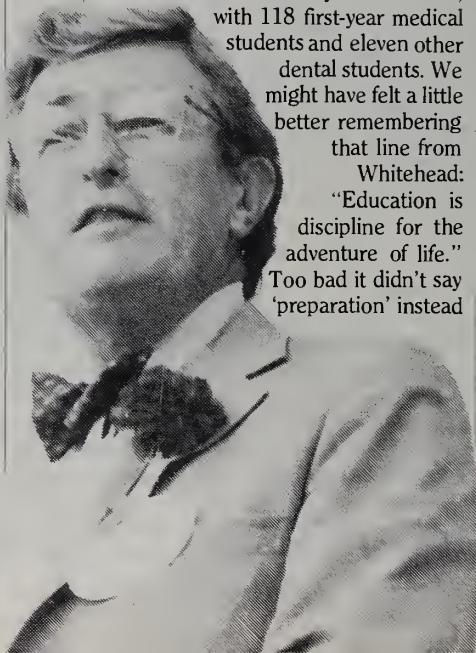
Worries began to creep back when I realized that deciding to be a dentist, especially deciding at an early age, was like picking your subspecialty before you picked your parents. Before you even knew you wanted to be a fish, you were in a funny little pond. It also didn't help to hear the faculty say, "We regret to tell you that half of what we have taught you is wrong; unfortunately, we don't know which half." Things seemed a little better several years later when someone—probably Harry—noted that it didn't matter which half was wrong because the other half was irrelevant or worthless, and in any case both halves were already forgotten.

One of the protective adaptations of little fish is to hide under the bank where they can watch the whales and not get eaten by the sharks. There are a lot of whales and sharks in the little ponds of Harvard which make the water muddy and swimming very dangerous. For twelve years from a sheltered rock in the School of Dental Medicine, I watched the leviathans collide in these marbled halls and took lessons from the big fish. Having thus learned the trade of deaning, as well as how to get tenure, I left one of the oldest universities in the New World for the newest university in the newest state system, the State University of New York at Stony Brook.

During the last thirteen years I have paddled about while eastern Long Island was stripped bare to build a health sciences center with a medical school; a 540-bed hospital; schools of dentistry, nursing, allied health, and social welfare; plus all the necessary support systems. The center is readily identifiable because it looks like the new Brigham, having been designed by the same architect. It just cost more—so much more that now I can watch New York go broke instead of worrying, working, or even growing up. The Governor gave me a full set of Kafka to add to the standard authors on academic life in New York, Machiavelli and Lewis Carroll. I sent him a copy of that little-known plan, *John Bull's Other Island*, in which Shaw describes the ideal world as one where "work is play and play is life." Harvard and Stony Brook have nothing in common—and everything in common.

Of course I jest. Simply by having been in this time and place we found ourselves—big fish—facing oceans of opportunity. We chose the ponds ourselves. Even those that are little are pleasant, comfortable, and fascinating. And following Dr. Hiebert on this program serves as a reminder that the ponds we inhabit—dotted all over the globe—have a most remarkable way of flowing into one big sea. Twenty-six years ago Marc Hansen and I spent the summer working at the Notre Dame Bay Memorial Hospital in Twillingate, Newfoundland. One day a woman brought in her son who needed some teeth extracted. Their names were Pardy. Clement Hiebert had delivered the little boy five years earlier during his summer in Newfoundland, and Mrs. Pardy—having many other children and being fresh out of names but grateful—named him Hiebert Pardy. For all these years, Clement, I've wondered if I'd ever meet you. ♦

Vice president for health sciences at the State University of New York at Stony Brook, Howard Oaks received his D.M.D. in 1956 from the Harvard School of Dental Medicine.



CLASS

CONTINUED FROM PAGE 25

Medicine is one area where there have been great achievements in promoting life and health, where enormous benefits must surely lie ahead. These achievements become meaningless, however, when we lose sight of the broader social context in which they occur. This is not an easy vision to live with sometimes, and it certainly carries with it anxiety and an often painful sense of urgency. But it is essential that we keep our eyes open to the world outside the hospital walls if we are to fulfill meaningfully our roles as defenders of life and healers in the fullest sense of the word.

SOCIALIZATION IN MEDICAL SCHOOL: SETTING A NEW PRECEDENT

by Nancy Ellen Reuben

I AM SPEAKING ON BEHALF OF TEN medical students, all of whom are women, and all of whom come from different ethnic and socioeconomic backgrounds. Our ages range from twenty-three to thirty-five. Some are single, some married, and one has a child. A few of us have had other careers. We came to medical school with a variety of talents, and, like most of our classmates, we came with the expectation of serving and caring for other human beings. This has always been the ideal of the aspiring physician. But has the process of medical education reinforced or thwarted this ideal? Has it helped us to see our differences as assets or liabilities? What is our challenge from this point on?

As medical students we enter a professional elite, with status and privileges that would tax the humility of even the most devout servants of humanity. We are fitted for a mold which, in our culture, has been cast in the image of the white, upperclass male. This threatens our identification with the very people we have intended to serve, particularly those who are poor, non-white and female.

From the very beginning, our expressions of caring are pitted against our fears of inadequacy. We are given little reward for comforting our patients; and our efforts seem to dwindle along with hours of sleep, and with the pressure to absorb massive amounts of information. We come to accept that a night at the patient's bedside may be better spent boning up for morning rounds in pursuit of the more highly acclaimed

reward—the approving smile of the Attending as we quote the latest journal article.

In this atmosphere, priorities tend to go astray. The most noncompetitive among us begin to focus on the quest for the elusive excellent, and career goals begin to take precedence over patient care. Worrying about grades leads to worrying about internships, residencies, fellowships. To resist often takes more energy than is generally available.

As women, we function in a system where double standards still abound: where so-called 'male' traits like stoicism and detachment still imply strength and authority; where the quiet male is considered thoughtful and the quiet female timid; where the aggressive male is welcomed, and the aggressive female is not; and where, in treating patients of the opposite sex, the friendly touch of the male physician is considered "good bedside manner" while the friendly touch of the female physician is deemed flirtatious. And all this in a setting where men and women can least afford to suppress their so-called 'feminine' instincts to be compassionate and tender, to reach out emotionally.

Minority students bear additional burdens. They must often work twice as hard to get half as much recognition. They must work overtime on admissions committees in continual defense of their ever-threatened numbers in the school.

In the hospitals, we face further obstacles to our development as we enter into uncomfortable power relationships with nurses and technicians. No matter how little training we've had, we arrive on the wards to find that, as students of medicine, we automatically outrank experienced nurses. In a very short time we come to treat these people with disrespect, forgetting that they are fellow care-providers.

We are then introduced to the power struggles which exist among different specialties: surgery versus internal medicine versus pediatrics versus psychiatry, and *everyone* against family practice—as if one specialty had the exclusive ability to cure.

If we are to emerge from medical school with the same values that we entered with, then the socialization process of these four years must be reversed. We have a privileged role, one which calls for the most profound humility and trust. But we often resort to arrogance and selfishness as a means of coping with our anxiety. In response to these unhealthy attitudes which threaten to separate us, let us make a commitment to working together, to sharing our feelings of inadequacy in the face of incurable illness, to confronting openly the frustration we feel in our efforts to process the pain and fear of our patients while at the same time contemplating our own mortality.

We did not record these thoughts merely as a vehicle for our anger. Anger is useful only initially, to identify and accentuate a problem. For the emotion to have meaning, it must be channelled into constructive activity. With this in mind, we came together in mutual support, to celebrate our collective ability to withstand pressure, and to realize, finally, that we are not impotent to effect change.

We have not intended to diminish the positive aspects of our experience, nor have we for-

gotten the good times and the feelings of warmth and friendship for our classmates. And we are grateful for the exceptional teachers who have inspired us and encouraged us to remain idealistic.

But if our best instincts as healers are to be nurtured in the fullest sense, then this institution must provide role models who meet the needs of all of us. There must be a new commitment to advancing women and minorities to influential positions on the faculty and in the administration, because the present efforts are inadequate, the process painfully slow. In addition, women and minorities must no longer be excluded from the better residency programs, particularly in surgery and its subspecialties.

As we begin our careers, our challenge lies before us: to improve the health of *all* people, and to develop into a generation of humane and caring physicians. And, in becoming the kind of doctors we envisioned ourselves four years ago, we can set a new precedent for those who will succeed us.

Co-authors of this piece were Bolanile Akinwale, Nancy Cochran, Michelle Holmes, Suzanne Koch-Weser, Heather Pena, Janet Regier, Lydia Rios, and Laurie Towne.

THE DOCTRINE

by Gladys Marie Gibbs

HERE WAS IT written that "Education must be a grueling process in order to be effective"? Honestly, I looked but I was not able to find this long-established doctrine. I was certain, however, that it must exist. Why else would the vast majority of educators continue to be such hard liners? I continued my search in vain until I came to the big "H" and found this secret doctrine. The original copies had been destroyed long ago, but a special "Revised for Medical/Dental Education" edition was still in existence and read something like this:

SECRET DOCTRINE FOR THE EDUCATION OF MEDICAL AND DENTAL STUDENTS

Cardinal Rule #1: Education must be painful to be effective.

It is imperative that stressful conditions be kept at the maximum. Students must never be allowed to get ahead of the game. At best, they should only be allowed to break even.

Cardinal Rule #2: There are no prizes for being a good educator.

It is more important to be a renowned expert in your field. It makes little to no difference whether you can convey this wealth of information to the students. After all, an institution cannot survive on its academic merits alone, so being a good instructor is just not "Goodenough."

Cardinal Rule #3: The students are the ones who fail, not the instructor.

It is the students' responsibility to learn all
CONTINUED ON PAGE 54

the subject matter no matter how poorly or incomprehensibly presented. Even if you have to fail more than half the class, the high standards of the institution must be maintained.

Cardinal Rule #4: You must strip students of all self-confidence before you can remake them in your own image.

It is important that all students receive proper indoctrination to "the system" and therefore carry forth the tradition of the institution. You must mold them and shape them in your own image. Who cares if a few are lost along the way?

Cardinal Rule #5: Positive reinforcement must never be used when punitive measures will work just as well.

Students may mistakenly get the idea that they have done something right. Even if the student knows ninety-five percent of the material, the other five percent that he or she doesn't know must be emphasized.

Cardinal Rule #6: As an educator, you have the sole responsibility for the students' best interests.

Never assume that students know anything that would benefit them. Lead them by the hand and make sure that they don't hurt themselves or the patients.

Of course, there is no such doctrine; cardinal rules are preposterous. Yet all of us have been made to feel inadequate at some point during our education. It is time for us to take a long, hard look at the process that educates us. Is this process doing more harm than good at times? Does the mean always justify the end?

As we leave this great institution many of us will be cast in the role of educators. Remember the instructors who we have admired and respected: Goodenough, Raviola, Kennedy, Dunskey, and Guralnick, to name a few. Remember the uncomfortable situations that we often found ourselves in and don't perpetuate the misery. And, above all, remember that as doctors our primary responsibility is to our patients, and as educators to our students.

H.M.S. AND EGGS

by Richard Maury Stone

FOUR OR SO YEARS AGO the dreams of idealistic youth coupled with admissions committee quirks belched us onto the peculiar confines of Harvard Medical School. Many of us thought we knew why we wanted to be doctors, but few had any idea of what we were in for. I, for one, didn't have a clue. For example, I went through the first two years thinking "next slide please" was the most prevalent disease in Western society.

During these past four years many curious things have happened to us. An astronomical number of facts, some even related to the practice of medicine, passed between our ears. Eponyms ranging from Addison's disease to Zollinger-Ellison syndrome made our notes

look like the Boston phone book. (Many felt the phone book made more interesting reading.)

We were wondrously exposed to the discomfort and indignities of training in our chosen profession, such as staying up all night, stitching alcohol-soaked derelicts in the emergency room, and being grilled by superiors on rounds. And if all this weren't enough, Harvard—knowing we'd be too busy to manage our own finances—courteously invested our tuition money in the medical area power plant.

I know this all sounds too good to be true, but some of you hedonists out there might be asking, "OK Doc, why put yourself through all this? What happened, couldn't you get into business school?"

On one hand, these are the kind of nosy questions we ask ourselves during tough nights on call. On the other hand, the issue of motive, as they always say in detective stories, is of utmost importance. After all, it's nice to know what makes your doctor tick, especially if you've been sitting in her waiting room for three hours. The reason we're all in the process of learning medicine is simple: learning medicine is fun.

Fun in medical school? I must be kidding. Let's face it, there's got to be something in it for us. And unless you're getting royalties from the book you've written about your experiences here, or you've sunk your life savings into a salad concession on Longwood Avenue, it just isn't the money.

That special something is also not pleasures of the flesh, despite what you've been reading in *The House of God*. The kinky ones among us might get into not seeing friends for weeks, arising at 4 a.m. to peel back surgical dressings, or gorging on free hospital food at midnight. The average person, though, likes to have some low-level excitement—like watching the Red Sox or cooking an edible dinner. Medicine just makes it difficult to do the normal little things in life.

Sure it's tough, but think of all the satisfaction we get from all the nifty stuff we do every day—you know, saving humanity and curing sick people. Hold it, not so fast. I heard that humanity was almost saved a few times, but always seemed to go right ahead and get sick again. Even though humanity is a fine example of a chronic disease, there are still surgeons who would try to save it by resecting the offending parts. Trouble is, there wouldn't be much left by the end of the operation.

As far as curing sick people, it sounded great on our admission interview and happens a lot on TV; but, we've all learned it's neither easy nor frequent. Prevention is also a nice idea, but I can't even get my mother to stop smoking cigarettes. Making the correct diagnosis is also swell; but if it's a bad disease, chances are there's no cure or at least no appetizing treatment.

There is obviously a large gap between expectations and reality in medicine. One would think that such a gap would put a clamp on doctors' arrogance, but we always have to be on guard. I read a young sportswriter's fight reporting in the *Boston Globe* a few months ago. This particular fight took place in a Harvard teaching hospital; the opponents were cancer and his body. He wrote, "Doctors were never meant to be funny.

After four years of medical school and the years of internship and residency, the only jokes they knew were their own." This indictment bothered me, and it bothered me even more when I saw the author's picture on the obituary page last week. His story is tragic, and once again proves our power is limited. It also shows that if we listen carefully, our patients will teach us a lot about ourselves.

Now I'm not advocating that medical students or doctors be stand-up comics delivering one-liners at the drop of a nasogastric tube. The fun comes in laughing at ourselves and participating in incredibly rich experiences. Dealing with sick people all the time is a frustrating challenge, but once in a while we can be glad we helped somebody.

In our second-year Introduction to Clinical Medicine course we realized we didn't know very much when we heard patients saying, "Those young doctors with their little black bags are so cute. I just hope they're not all coming to examine me!" Now we are about to take on real responsibility; yet none of us can be totally convinced we've gone far past those days when we first learned the physical exam. Despite all the technology and power at our disposal, our very lack of knowledge and ability forces us into being emotionally involved. Yes, the intellectual challenges of unravelling the mysteries of complicated diseases are exciting, but the same could be said for income tax law. On the other hand, the chance to be so damned human every day (if we remember our limitations) is downright fun. Rewards in medicine are less tangible than money, rank, or political office. But they are, I think, enough to have kept us a good distance from business school.

Woody Allen tells a story that sums up the benefits of medical training:

A man walks into a psychiatrist's office. "What is the problem?" asks the doctor.

"It's my brother. He thinks he's a chicken."

"Well then," says the doctor, "why don't you bring him in?"

"I can't," the man replies, "we need the eggs."

One hopes that in our careers as physicians, we each learn to lay our own very personally useful eggs.

VALEDICTION

by Daniel C. Tosteson

AS YOU PREPARE TO DISPERSE to hospitals throughout the country, I am grateful for the opportunity to share these last moments of your tenure as students at the Harvard Medical School. I feel especially close to you; four years ago we started at HMS together. True, it has been your first and my second time

Daniel C. Tosteson '49 came to HMS for the second time—as Dean—four years ago with the Class of '81.

around. True, we have had different windows on the Quadrangle and different rotations in the hospitals. But we have both learned things that we didn't know before in a setting that was, at first, unfamiliar, with people who were, at first, strangers.

On the day when you arrived, I urged you to devise a strategy for your medical education. I warned you not to become so preoccupied with

the details of your experiences, the myriad of important, essential data, that you would lose sight of where you were going. Michelangelo said, "Attention to detail leads to perfection and perfection is no detail." But he had in mind the form lodged in the stone. Most of us are less certain of what it is we want to carve out for ourselves.

On that first day, I was saying to you, it is im-

portant that you find your way. Now I want to know where you are. What have you learned that is relevant—that will guide you in the future? This is the most critical question for medical education at Harvard, or any other university. It is difficult for you to answer at the moment, but I hope that you will someday let me know the answers to that question. One

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ODE TO CLASS OF '81

by Kenneth William Eckmann

Once, when I was feeling cautious, very weak, and slightly nauseous,
Wond'ring: "Where's that dreadful letter I have so long waited for?"
Suddenly—the doorbell dinging! My entire body flinging
Towards the reason for that ringing, standing just outside my door.

Never did I have such trouble opening a simple door,
Though I scratched and clawed and tore.

There, the weatherbeaten face, protected by a can of Mace,
Of the U.S. Mailperson—out upon the day's travail.
Standing there, all dressed in blue, he asked me, "What is wrong with you?"

Is this what you always do, every time you get some mail?
I know why you're so excited. I have seen the morning mail—
You won't have to go to Yale.

"So take it easy, kid," he said, "cause this has come from Harvard Med."
All that I could manage was a grunting noise, a sort of moan.
Lo! but I would not have guessed it—green return receipt requested!
Thirty dollars well-invested! Sudden loss of sphincter tone!
Firecrackers, celebration, total loss of body tone.
Every single fuse was blown!

What you've heard begins the story, told in all its doubtful glory,
Of a certain student and the odds that he rose up against,
Till finally the answer—yes—and he was in at HMS.
Ah, sweet measure of success! In September he commenced.
Life, he thought, would be so simple once his studies had commenced.
Oh, so inexperienced.

Soon the honeymoon was ended; constant work was recommended
Though it seemed this method tended to result in overload.
Every day he'd work and read until his brain was fricasseed.
"This," he groaned, "I really need." He worried that he might explode.
He believed that too much work could make the cranium explode.
Poor kid had been really snowed.

Path and Pharm and guts and bugs and Biochem and wonder-drugs,
Histo, Micro, structure, function, what it is and what it does.
Though he carefully dissected everything got disconnected.
Who could tell where what's directed or just what the hell it was?
And the oft-repeated question—tell me *why* the hell it was?
Often answered—just because.

Mentally, he was impacted, over-theoried and enfacted.
New minutiae and facetiae piling faster every day.
If it truly is minutiae then at HMS it's crucial.
Information by the bushel—never slowing, no delay.
Working all the time, no play,
Quoth the student, "Oy vay!"

Next, the student, very busy, overworked, fatigued and dizzy,
Had to study pathophysiology—he barely passed.
Then a struggle with the Boards as rapidly he hurtled towards
An education on the wards. He never thought that he would last.

Two years down, and two to go, he never thought that he would last,
Or that time would go so... slow.

On rotations he felt often that his brain would start to soften,
Undergo intense gliosis, shrivel up and disappear.
This was *not* a panacea. Soon he suffered diarrhea.
This is what it takes to be a doctor? This is some career.
Oft he wondered, late at night, as he pondered this career,
Whatever am I doing here?

Every 3:00 a.m. admission left the neophyte physician
Praying that some kind magician would command the scene to halt.
But no Gandalf and no Merlin came with magic wand a-twirlin'.
Like a giant maelstrom whirlin', every night the great assault.
Running, writing, cutting, pumping, all night long the great assault.
Quoth the student, "Oy gevalt!"

"Tell me, student," said the Visit, "See this patient? Well, what is it?
Tell me all the signs and symptoms. Did you read the EKG?
What range are the LFT's in? Hear the bruit? What's the reason?
Did you notice that he's seizin'? What's the physiology?
You just finished Basic Science—what's the physiology?"
Quoth the visit threat'ningly.

"Is the patient orthostatic? Could the problem be hepatic?
How long has he been asthmatic? What's your diagnosis, sir?"
But the student, weary, battered, thoughts disorganized and scattered,
Hadh't even known what mattered, said, "I think it's too obscure."
One should never tell the Visit *anything* is too obscure.
Say, 'I'm not exactly sure'.

After this he felt emergin' what it takes to be a surgeon.
They don't ask a lot of questions. They prefer to scrub and go.
Every other night they're cuttin'. He was recognizing *nuttin'*.
Cramming every slippery gut in—what a strange scenario.
Who could think of such a freakish and bizarre scenario?
Maybe Edgar Allen Poe.

After months on every service, limp, exhausted, wretched, nervous,
Said the student to the Dean, "Please tell me what we do this for.
Every ounce of strength expended. Normal sleeping is suspended.
Living style quite upended. Tell me, Dean, I do implore!
Until when will this continue? Tell me, Dean!" he did implore.
Quoth the maven: "Evermore!"

Then a tap upon the shoulder; someone said, "You're four years older.
We the Fellows have decided to award you your degree."
Stunned a moment, misperceiving, blinking, staring, disbelieving.
Holding a diploma, *leaving*? "What?" he stammered. "What? Who me?"
As the Dean presented him an "M", two periods, a "D"
Once again, he asked, "Who me?"

Well, a rather rakish swagger quick replaced the former stagger.
And a proud and haughty smile soon appeared upon his face.
Til he thought, "The fourth of June—that means I'll be an intern soon."
And that deflated his balloon—put him right back in his place.
Bottom of the totem pole, put him right back in his place.
Very rapid fall from grace.

Once again, we're slightly cautious, and perhaps a bit more nauseous.
Everyone is well aware of what is our collective fate.
But Miss Koller has decreed it. Though we may not want or need it
HMS will now concede it—all of us will graduate.
Do you want to know our secret? Do you want to graduate?
Keep your term bill up to date.

thing that you have surely learned during the past four years is how to listen—at least we've given you enough chances to practice! As I did on opening day, I will give you another opportunity, by describing what four years with you at HMS has done to my ideas about learning in medicine.

I now realize that medicine and medical education, at HMS and elsewhere, are much more complex and diverse than I had thought. This complexity far exceeds my capacity to grasp and retain; it compels me continually to learn, as well as to improve my style of learning. This is deeply satisfying but also hard work. To make the effort requires that I care—a caring that is sustained by you and others who gather at HMS to learn.

Medicine is complex and diverse with respect to people as well as ideas. Since physicians serve patients from all walks of life, it is fitting that students entering medicine be drawn from a wide variety of social, economic, and ethnic groups. I learned something from you about that. In the summer of 1978, following the Bakke decision, I assumed that you knew of my support for the Harvard Medical School's commitment to affirmative action. It was hard for me to understand that an institution with the record of HMS might move away from this course. During the evening meeting in Amphitheater E in the fall of 1978, Michael Payne showed me a picture of the class of '72. There were no black faces in the photo. I began to understand better some of your feelings. Michelle Holmes's skit on standardized tests in the second-year show educated me further. During this period, many members of the faculty also became more appreciative of the importance of having individuals from different backgrounds at HMS. I hope that you share my feeling that the admissions process at HMS was improved by the discussion that we had at that time.

I have learned not only about the diversity of your origins but also about the breadth and depth of your talents. You will need and use both in the many roles that physicians assume. Some of you will be general practitioners and in this capacity will be counselors to your patients; others will be specialists, expert in some aspect of the high technology of modern medicine; others will be managers of hospitals and clinics; others will become scholars, teachers, investigators, discoverers of new insights into human biology. Most of the information that you will use in these jobs will be acquired or reacquired during your residency years and later. But I hope that you will grow your special tree of medical knowledge from the three conceptual roots that you planted here at HMS—that each human being is a living organism, a member of society, and a unique individual.

In all three of these dimensions, medicine is changing rapidly. When you began medical school, it was still unknown that the DNA in human genes contains intervening sequences that do not, themselves, code for the kind and order of amino acids in proteins. This spring, Stuart Orkin and his colleagues at the Children's Hospital reported the specific



nucleotide substitutions at one end of an intervening sequence in alpha globin gene that cause a form of thalassemia. Some of your fellow students at HMS are participating in this work. Such discoveries in genetics, immunology, cell and developmental biology, neurobiology, and other fields of the natural sciences basic to medicine are transforming our insights with respect to the human organism.

The interaction between medicine and society is also changing. Increasingly we recognize that many disorders that bring patients to doctors arise from the socioeconomic conditions in which people live. I think of exposure to toxins in the workplace, too little or too much of certain kinds of food, inadequate physical exercise, poverty and its destructive effects. Furthermore, new forms of organization of medical practice are being tried out in an effort to improve access and reduce the cost of care. These developments introduce additional complexities into the professional lives of physicians, complexities informed by disciplines such as economics, sociology, management, and law. Many of you have expressed the need for such knowledge by enrolling in relevant courses in the School of Public Health and other faculties at Harvard, by supporting the establishment of the new department of social medicine and health policy in the medical school, and even by taking gentle revenge.

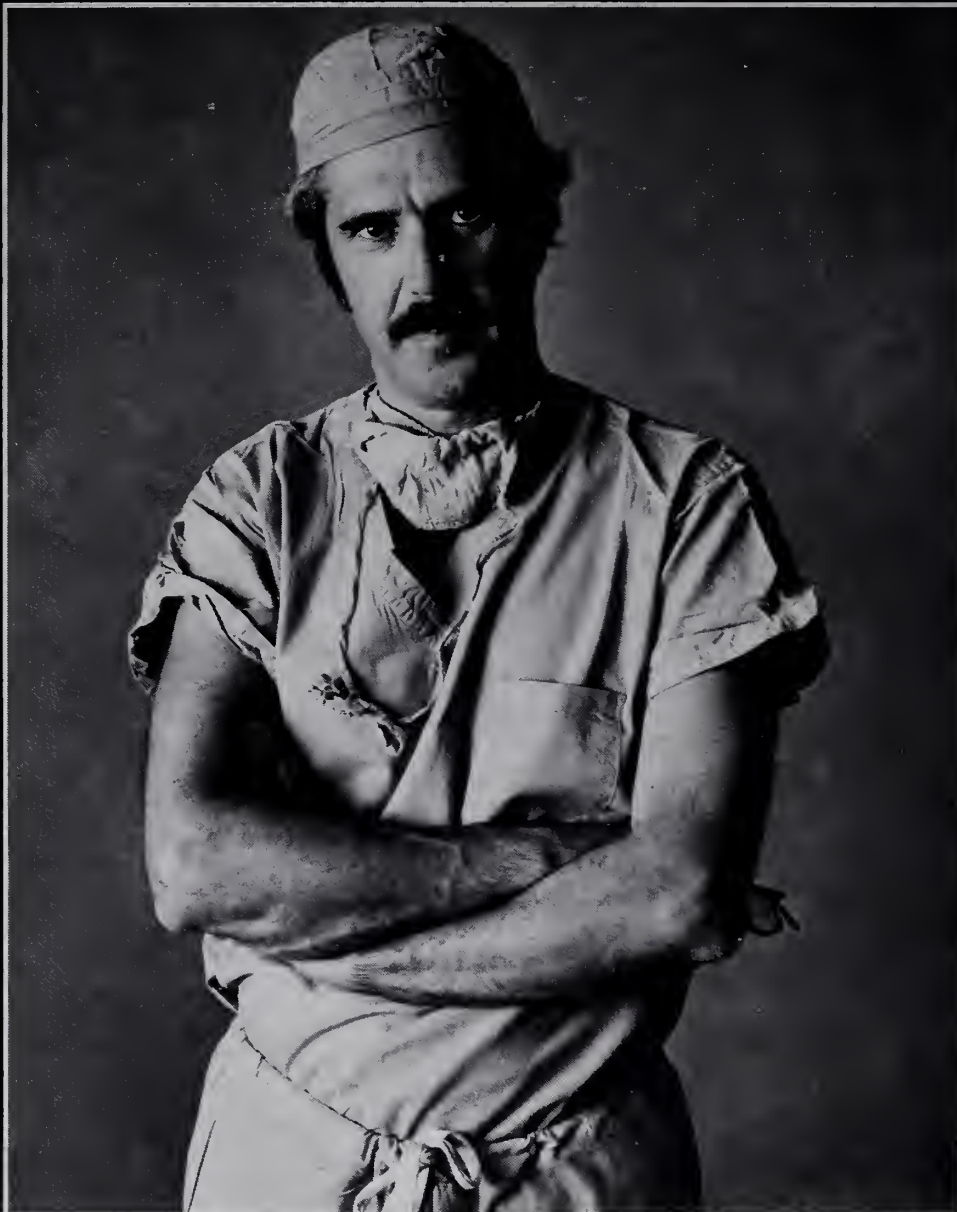
Since we all came to HMS four years ago, new issues have also sprung up around the concept of each person as a unique individual, and the ethical and moral implications of applying medical knowledge, especially at the beginning and end of life. Since you began in the first year, it has become technically possible to diagnose *in utero* by direct examination of fetal DNA about ninety percent of cases of homozygous sickle disease. What should be done with this information? Is it a sufficient basis to justify abortion? Who should decide? At the other end of the rainbow, medicine becomes more and more capable of extending life through dialysis, pacemakers, artificial and transplanted organs. When is the expense of prolonging one unique life diminishing the opportunities for fulfillment of others? Who should decide? You will wrestle with these questions throughout your period of service as physicians.

Now you know, better than you did when I first met you, that I have only touched a few surfaces of the vast, dynamic terrains of knowledge that influence medicine. There is no hope for any of us to grasp and hold it all. But there is hope that we can improve our ability to learn what we need when we need it. For starters, not all—but more and more of the information that we need is known by someone, and therefore in principle, if not in practice, accessible. Furthermore, techniques for the storage and rapid retrieval of information are becoming more available in medicine. During your careers, this development will accelerate, making it easier and more efficient for you to bring to your patients the right knowledge at the right time. We haven't helped you very much in acquiring the skills to use these information-managing machines, but some members of the faculty are now working to improve this situation.

Such technological advances will not, however, relieve you of the need to be clear in your own thinking, particularly in deciding what you want and need to learn. During recent years I have more and more come to realize the importance of this kind of mental self-discipline. It is the first, essential act in the process of learning. But constructing frameworks for thinking arises from an inner commitment to the importance of the work. You have to care, to give a damn about doing a good job. Not long ago my son, Joshua, received from his grandmother a book by Charles Schultz entitled, *Things I Have Learned After It Was Too Late—And Other Minor Matters*. Schultz makes the point that "A good education is the next best thing to a pushy mother." For 'mother', substitute all of the important people in your life: friends, classmates, even the rare teacher.

A commitment to learning is the one force that unites all true physicians. The valid measure of our experience in learning at HMS is whether we are now more dedicated to that effort than we were four years ago. I like to think of medicine as the synthesis of learning and caring: learning how to care effectively for the sick and suffering, caring enough to keep learning even when you are tired and beat. Perhaps Charlie Brown said it best when he said, "Life is like an ice cream cone. You have to learn to lick it." ♦

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